

***United States Court of Appeals
for the Second Circuit***



**APPELLANT'S
REPLY BRIEF**

75-7621
75-7645

No. 75-7621

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IN THE

United States Court of Appeals

FOR THE SECOND CIRCUIT

PLANTRONICS, INC.,

*Plaintiff-Appellant
and Cross-Appellee,*

v.

ROANWELL CORPORATION,

*Defendant-Appellee
and Cross-Appellant.*

APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORK

**PLANTRONICS' MAIN ANSWERING BRIEF ON THE LARKIN PATENT
AND REPLY BRIEF ON THE HUTCHINGS PATENTS**

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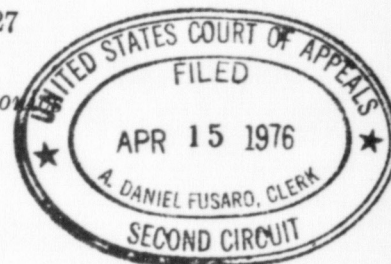
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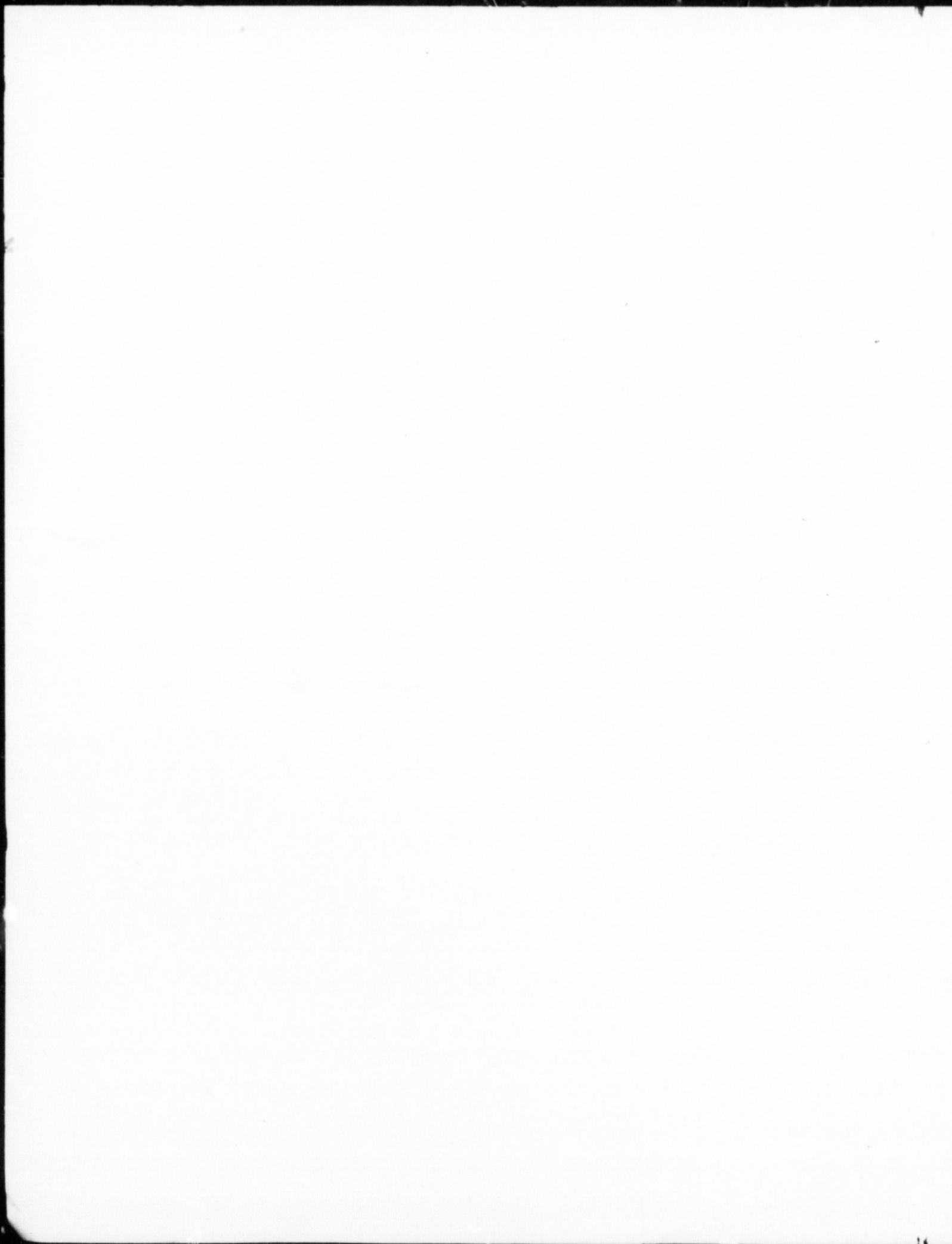


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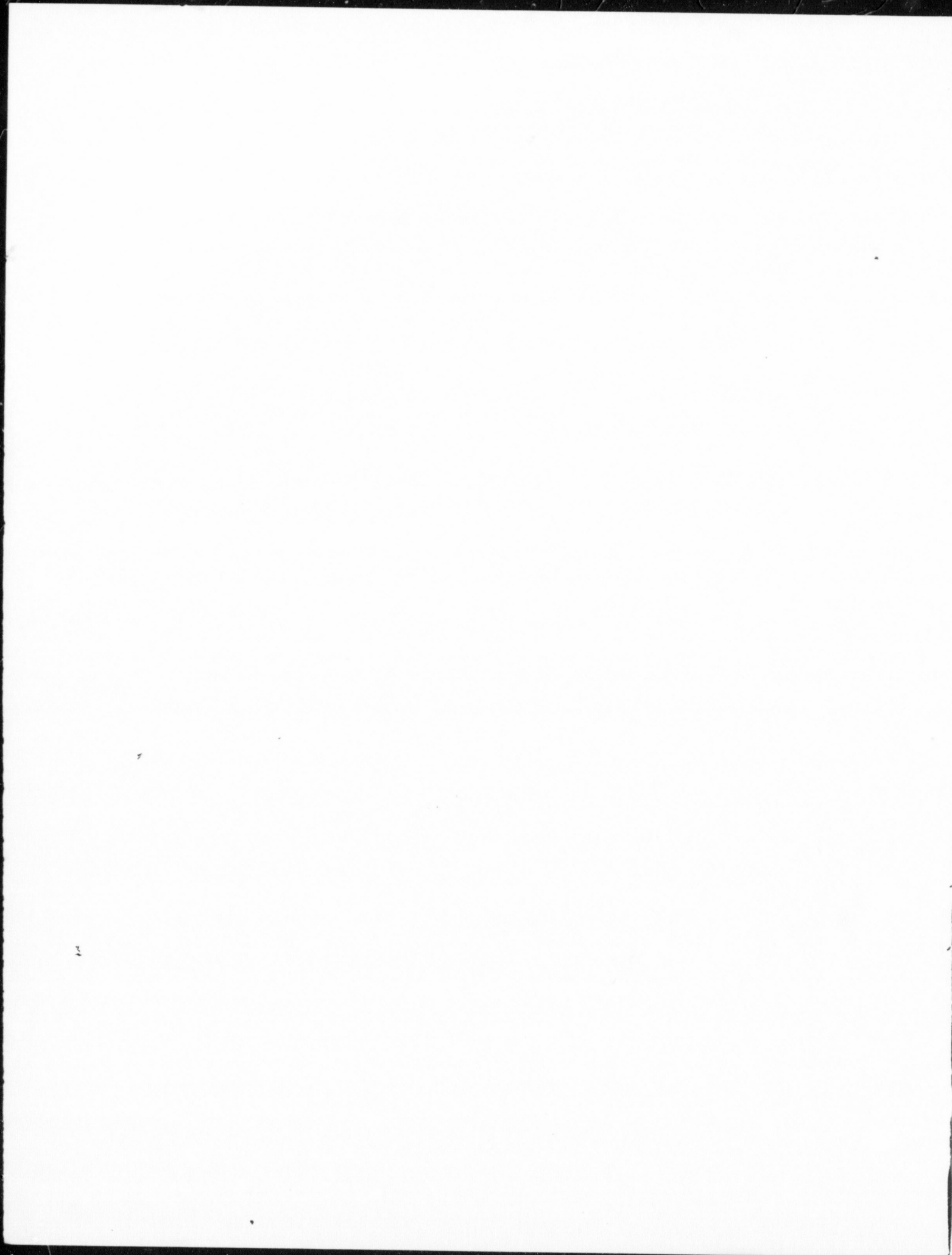
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I. GENERAL

***Dann v. Johnston confirms:
What would "amount to invention"
is not the legal measure of patentability.***

Since Roanwell's brief was filed, the Supreme Court has again addressed the fundamental law issue of our present case.

Roanwell's brief has repeatedly argued with respect to the several patents in suit, that

"it would not amount to invention"
or

"it is not inventive"
to do this or that.

That is the use of what we now know to be an archaic test for patentability. As an additional, super-statutory requirement for patentability, "invention" was rejected by the Supreme Court again this past March 31. The Supreme Court treated this in *Dann, Commissioner v. Johnston*, U.S., No. 74-1033 (Mar. 31, 1976) much as Judge Giles Rich said it must be treated, in "Laying the Ghost of the 'Invention' Requirement." (Re-printed in the white-covered volume filed with our first brief.)

Said the Supreme Court in *Johnston*:

As a judicial test, "invention" — i.e. "an exercise of the inventive faculty," * * * has long been regarded as an absolute prerequisite to patentability. [Citations to pre-1952 cases]. However, it was only in 1952 that Congress, in the interest of "uniformity and definiteness" articulated the requirement in a statute, framing it as a requirement of "nonobviousness." [35 U.S.C. 103]

* * *

This Court treated the scope of Sec. 103 in detail in *Graham v. John Deere Co.*, 383 U.S. 1 (1966). There we held that Sec. 103 * * * "was meant merely as a codification of judicial precedents . . . with congressional directions that inquiries into the obviousness of the subject matter sought to be patented are a prerequisite to patentability." * * * [W]e also set out the central factors relevant to any inquiry into obviousness * * *. Guided by these factors we proceed to an inquiry into the obviousness of respondent's system. [Emphasis added]

And never again did the *Johnston* opinion mention what is or is not "invention" or "inventive", only what is or is not obvious — for *that* is now the lawful measure of patentable inventiveness.

What had "long been a prerequisite to patentability" was in 1952 clarified with § 103's inquiry into whether

"the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." 35 U.S.C. § 103.

That "obviousness" standard had previously been articulated, inter alia, by the Supreme Court in the then-recent case of *Goodyear Tire & Rubber Co. v. Ray-O-Vac Co.*, 321 U.S. 275, 279 (1944), and in *Webster Loom Co. v. Higgins*, 105 U.S. 580, 591 (1882), and *Washburn v. Beat-Em-All Barbed Wire Co.*, 143 U.S. 275, 282-83 (1892).

The codification language, in pursuit of "uniformity and definiteness," was the Supreme Court's own earlier *obviousness* test, addressed "to the invention as a whole" and "at the time the invention was made."

• • •

Roanwell's brief dwells at length upon the manner of Mr. Larkin's and Mr. Hutchings' work, as though the starting point of their individual work, the manner of *their* work, were relevant to patentability. But obviousness *to the inventor* is specifically rejected in the statute as not relevant to patentability, because every invention must become obvious at some time to the inventor. So only obviousness "to those of ordinary skill in the art" is relevant to the statute's measure of patentability.

Section 103 concludes:

"Patentability shall not be negated by the manner in which the invention was made."

Accordingly, Roanwell's lengthy recitations about the manner in which the inventions in suit were made by the inventors, and "it would not be inventive" to modify the British horn to use with a Telex device with boom mike left off, etc., is all irrelevant argument which obscures the inquiry into "obviousness" of the invention as a whole "at the time the invention was made."

What the real men in the art, the men *who were there* actually did with the problem — that is what we must address.

As one recent court put it pungently:

"Defendant's hindsight reconstruction of the inventions of Milton, Breck and Rabo patents in suit, is not relevant to obviousness. *Goodyear Tire & Rubber Co. v. Ray-O-Vac Co.*, 321 U.S. 275, 279 (1944); *Diamond Rubber Co. v. Consolidated Rubber Tire Co.*, 220 U.S. 428, 435 (1911); *Neff Instrument Corp. v. Cohu Electronics, Inc.* [298 F.2d 82 (9th Cir. 1961)]"

Union Carbide Corp. v. Filtrol Corp., 170 U.S.P.Q. 483 (C.D. Cal. 1971), *aff'd*, 179 U.S.P.Q. 209 (9th Cir. 1973).

II. THE LARKIN PATENT

A. VALIDITY

Introduction: Roanwell seeks trial de novo

Roanwell's brief with respect to the Larkin patent makes no allegation of any "clearly erroneous" finding by the trial court, and no allegation of any error of legal principle.

Rather, Roanwell appears to seek trial de novo in this court on the issues of anticipation and obviousness. Roanwell tells us repetitively (e.g., Br. 49, 52) that "it is difficult to see how [one designing a headset in 1961] could fail to realize" this or that, the very arguments Roanwell was unable to sustain factually in this district court.

The trial court, with overwhelming evidentiary support, consistent with 25 pages of painstaking analysis in his opinion, concluded that men of skill in the art both were and indeed did, fail to see those very things. Such evidence was recently characterized by this court as the best and most persuasive proof on the issue of obviousness. *Timely Products Corp. v. Arron*, 523 F.2d 288, 294 (2d Cir. 1975).

The request for re-argument ab initio is not a proper basis for reversal.

Judge Conner as to the Larkin patent rigorously adhered to the legal tests mandated by the Supreme Court in *Graham v. John Deere*, 383 U.S. 1, 18, (1966), restated in *Dann v. Johnston*, U.S. (March 31, 1976), and correctly found:

"Indeed, as simple as the invention now appears, it would seem presumptuous to the point of arrogance to conclude that it was 'obvious' to persons of ordinary skill in the art, notwithstanding their lengthy and unsuccessful struggle to achieve such results." (App. 1091)

In our first brief we cited the historical evidence, summarized in the Chronology at pp. 40-58 hereof, showing what pre-Larkin workers actually did, including what Roanwell's workers were doing when Larkin made his invention.

Both the Larkin and Hutchings patented combinations are particular, unique combinations of what may properly be called parts of a puzzle, mouth tube (of particular acoustic property, perhaps not

well understood), microphone transducer of particular frequency response, ear tube, speaker transducer, housing.

In 1956 these puzzle parts, as well as how-to-combine them, as well as how-stable-will-it-be-if-I-combine them, as well as what-value-have-I-got-if-I-combine them, etc., etc., etc., were obscured in the massive haystack of mankind's knowledge, which included hundreds of other puzzle parts of all sizes and shapes and frequency and resonance and transmission characteristics, and thousands of other combinations of them as shown by the evidence: E.g., throat contact pick-up; an amplifier with any one of 10,000 amplification characteristics, or no amplifier; air-external-to-lips pickup with a variety of sound characteristics depending upon distance and position; coupling-to-head pick-up with unpredictable sound results; acoustic filters; large probe tube to air pick-up; chest contact pick-up; electrodynamic microphone transducers in combination with carbon speaker transducer with boom microphone; ear-muffs; flared-horn pick-ups; piezoelectric transducers; magnetostrictive transducers; electronic transducers; thermistor beads; baffles; acoustic resistors; attenuators; electronic filters, ear probe tubes, etc., etc., etc., each of which can be combined in hundreds of ways with others among the many puzzle parts to produce thousands of assemblies, mostly inoperative or useless to human users.

As is always the case, most of that knowledge, most of those puzzle parts, suggested themselves as likely parts for a headset designer to use, but most of them were pieces of misleading knowledge — leading away from any particular goal much more often than leading toward it.

The conception of neither invention existed in 1956.

Nevertheless the parties agree that all of the component parts of both the Larkin and Hutchings patented combinations — all the puzzle parts — were well known both to Roanwell and to the industry in or prior to 1956.

After many had suffered unsatisfied want for the inventions, both inventions have been striking successes.

Why were they not sooner seen? Because they were beyond the routine skill of the art.

Larkin's unique arrangement of transducers, capsule and tubes was the first to achieve both comfort and stability

In an apparent attempt to set the stage for its simplistic hindsight attack on the Larkin patent, Roanwell's brief, page 40 contains a grossly inadequate characterization of the Larkin invention. Roanwell thus brushes aside most of the features which made Larkin such an admittedly revolutionary headset, and all the problems foresight designers face that hindsight critics don't.

A headset, to be acceptable, had to be stable on the head; but also it had to have a stable pick-up position, and hold the voice pick-up in fixed relation to the mouth, even when the head was moved.

A satisfactory headset had to be comfortable to those who would wear it eight hours at a stretch. No known headset was.

It had to be versatile, so as to be wearable by all head-shapes, and on either left or right side — this while not losing any of the many other necessary features.

A satisfactory headset had to have a flat (uniform) frequency response; tubes do not have that property, but rather have resonances that put humps in the frequency response and greater attenuation at higher frequencies than at lower frequencies.

And so forth and so forth. All this is inherently sharply abbreviated here, as in all other presentations to Courts of Appeals in less than an hour of reading or spoken word, of what the workers spent years doing.

An important aspect of the Larkin invention is its provision of a combination of acoustic voice tube and miniature transducer. Transducers are devices which convert sound to an electrical signal or vice-versa, such as microphones and speakers. It is undisputed that *miniature* transducers, having been designed principally for hearing-aid use, generally have a "rising frequency-response characteristic," i.e., they give a stronger sound or electrical signal at the higher frequencies in the audio range than they do at lower frequencies. They are so designed

because hard-of-hearing persons generally have more hearing loss at higher frequencies than at lower frequencies. The result is that sounds from these miniature transducers seem high-pitched or "tinny" to persons of unimpaired hearing.

Larkin was the first to perceive that the deep, resonant bass sounds observed in listening to speech through tubes, might tend to offset the tinniness of a miniature microphone. As found by the district court, this was "an assumption which was later proved correct." (Opinion, App. 1093) The combination of acoustic tube and miniature microphone undisputedly has a flatter, or more even, frequency response characteristic than either the microphone or tube alone. The sounds produced by the combination seem more "normal." Although it may seem obvious by hindsight, this deduction of Larkin's is nowhere taught in the prior art or referred to in Roanwell's brief.

In addition to this so-called "complementary" frequency response feature of tube-and-miniature-microphone in Larkin's headset, another important structural feature ignored by Roanwell's characterization of the Larkin invention is the location of the transducer housing. Larkin places it "adjacent to the wearer's ear." While that seems simple enough by hindsight, the prior art did not see to place it there. Most prior-art workers placed the receiver (speaker) transducer in a housing which lay against the ear, leading to the very discomfort problems which so long plagued the industry. Certain enterprising people, like Dreher, sought to put the housing *in* the ear, connected to a molded ear piece; this too proved to be uncomfortable. (Defendant's expert Martin, App. 762)

Most important of all, perhaps, was Larkin's achievement of both comfort *and* stability, by his unique arrangement of transducers, capsule and tubes. Some people thought to move a receiver housing to a point adjacent the ear, as in the Telex Twinset; however, Telex located the microphone down in front of the mouth, and thereby lost the necessary stability of both microphone and headset. It is so easy by hindsight to see just how to achieve all of the beneficial results of the Larkin invention, as lauded by Roanwell's Acoustics Laboratory

in 1962 (Ex. App. 51)*, but workers at the time did not have the advantage of Larkin's teaching to guide them. As a result, they failed to see Larkin's solution, and they failed to solve the problems.

The Roanwell brief's characterization of the Larkin invention also fails to mention Larkin's provision of a swivelable voice tube connection, and a soft, flexible ear tube, thereby permitting

"the headset [to] be fitted to most users' head and ear geometries, rendering the headset highly versatile." (Agreed Finding P-3.37, App. 85)

By hindsight, high versatility may also seem easy to obtain, but the undisputed fact is that Bell Telephone Laboratories, an organization whose world-renowned skill in designing telephone equipment is not subject to challenge, when they designed the Y-1 headset to compete with Larkin, failed to achieve versatility:

"Q. Was there any forward and back adjustment on the Y-1 at all?

"A. As I recall, there was none." (Bell Labs' Romanow, App. 354) —

further evidence of the level of skill of actual workers, despite alleged obviousness to a 1975 defendant with 20-20 hindsight.

***Roanwell's argument of anticipation
of the Larkin invention is completely
contrary to fully supported findings
of the District Court***

The district court thoroughly considered the Pritchett and Dreher references, found important differences between them and Larkin in both structure and function, and concluded that neither Pritchett nor Dreher anticipated Larkin. (App. 1068-69, 1070-71 and 1073-74). These findings are supported by the evidence.

In patent law, "anticipation" means that all the elements of the claimed invention

*Roanwell's words were: "A combination of user comfort, low weight, high versatility, and adequate voice transmission."

"are found in exactly the same situation and united in the same way to perform the identical function in a prior pleaded patent."

Stauffer v. Slenderella Systems of California, Inc., 254 F.2d 127, 128 (9th Cir. 1957); to the same effect see, e.g., *Ling-Temco-Vought, Inc. v. Kollsman Instrument Corp.*, 372 F.2d 26, 267 (2d Cir. 1967); *McCullough Tool Co. v. Well Surveys, Inc.*, 343 F.2d 381, 398 (10th Cir. 1965).

Roanwell argues that the Pritchett reference, dating back to the dawn of the age of telephony (1878):

FIG. 5.

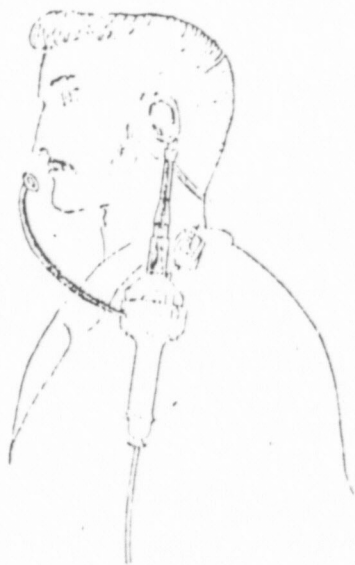
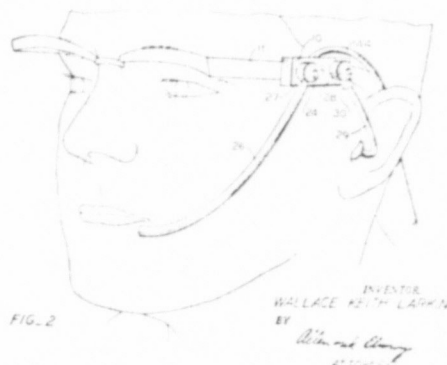


FIG. 4.



somehow can be made to anticipate the claimed Larkin invention (Br. 40-45), i.e., that Pritchett supposedly has every limitation recited in claim 1 of the Larkin patent, illustrated thus:



Larkin 3,184,356

Yet Roanwell is unable to get past even the preamble of the Larkin claim, without resorting to arguments of "equivalence" and the like to start filling in the gaps left by the Pritchett reference. The preamble of the claim in question recites a "miniaturized microphone headset employing a miniature microphone and miniature receiver . . ." This leads immediately to differences between Larkin and Pritchett. As the district court found:

"In Pritchett, there is not a "*miniature* microphone and a *miniature*' receiver as called for in claim 1, but a single large and ungainly transducer." (App. 1073-74)

Roanwell seeks to minimize this deficiency by urging that Pritchett's single large transducer is "equivalent." This is plainly not so, as found by the district court.* As discussed above, Larkin was the first to observe that the addition of a tube to a miniature transducer would make the frequency response of the combination more uniform, or flatter, because of the acoustic characteristics of tubes. (District

*We should note at the outset that it is improper to consider "equivalence" arguments on an anticipation issue, since, for anticipation to exist, all elements of the claim must identically appear in the prior-art reference. *Ling-Temco-Vought, Inc. v. Kollsman Instrument Corp.*, 372 F.2d 263, 267 (2d Cir. 1967).

Court opinion, App. 1092-93.) Thus, the specification of *miniature* transducers in the Larkin patent is acoustically important, and represents much more than a decrease in size and weight — although those features are also critically important and were long needed.

Moreover, the record is clear that single microphone/receiver transducers such as Pritchett's do not function in headsets the same way as the separate transducers of Larkin, and accordingly cannot be equivalent thereto. Plaintiff's expert, Mr. Romanow, responded to questioning from the court on this subject as follows:

"The Court: Isn't there a single transducer that would be effective within that limited frequency range both as a microphone and as an ear piece?

"The Witness: If you put it in by itself, but after all the attachments are made, then it wouldn't be.

"The Court: All right. That is what I thought." (App. 275-76)

Roanwell urges that a *post*-Larkin Plantronics ad, referring to a proposed Plantronics Model 51, indicates equivalence between a single microphone/receiver transducer, and separate miniature transducers. Roanwell's brief does not inform the court, however, that the model 51 as actually marketed had two transducers. (Ex. App. 951) When you get down to actual, real-life situations, what seems apt to work in an imaginary environment turns out to be not workable in the real environment.

The next point of difference between Larkin's claim and Pritchett is the Larkin claim's requirement that the transducer housing be located "adjacent to the wearer's ear." Tab EE of Roanwell's Brief tells us baldly "*Yes*," i.e., that Pritchett's housing is so mounted; it then goes on to admit that the transducer housing is supported not adjacent the ear, but on the wearer's *shoulder*. Once again, the difference has practical importance. If the unit is on your shoulder, it will not track head movements. The distance between the apparatus ("shoulder set" if you will) and the wearer's mouth will vary. As found by the district court:

"movements of the wearer's head [with the Pritchett device], if they were permitted at all by the spike-like column impaling the

wearer's ear, would vary the distance from the mouth to the voice tube and accordingly the amplitude of the transmitted signal." (App. 1069)

Finally, quite apart from the transducer and housing differences between Larkin and Pritchett, the kind of tubes employed by Pritchett were admitted by defendant's expert, Dr. Martin, to be so different in function from Larkin's that they would not be commercially acceptable:

"Q. . . . My question is to assume that we substitute under that system a 1975 variety Knowles transducer or Western Electric transducer for every transducer that is shown in that [Pritchett] drawing. Would you feel that though that could be done, that you have a commercially viable arrangement?

"A. Voice tubes of this size and these lengths would not be commercially viable today." (App. 772)

In this testimony, Roanwell's expert was pointing out yet another practical distinction between Larkin and Pritchett. Note the length of the voice tube in Pritchett:

FIG. 5.



It runs all the way to the shoulder; it is much longer than Larkin's, with attendant problems of resonance peaks and attenuation. From an *anticipation* viewpoint, we note that Larkin's claim calls for the voice tube being "adapted to be positioned adjacent to the wearer's

mouth." Pritchett's voice tube is not so positioned unless the wearer were as immobile as a statue, with attendant pain and fatigue; any motion of the head with Pritchett leads to the transmission problems alluded to by the district court. (App 1969)

There is plainly no anticipation by Pritchett.

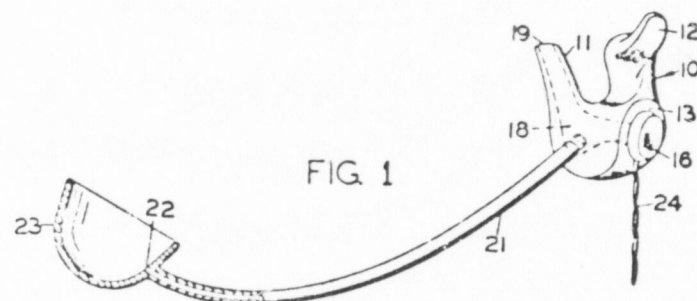
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Dreher. Roanwell further contends that Larkin's claim 1 is anticipated by the Dreher patent, disclosing an abandoned design that never served the public.

The Dreher patent was a reference considered by the Patent Office during the prosecution of Larkin, and neither the examiner nor the applicant viewed Dreher as having all of the elements of the Larkin claim nor as teaching the values of the Larkin combination.

Roanwell's brief once again takes us on an expedition through the Larkin claim, and purports to show that every recitation of the claim appears in Dreher. As before, Roanwell is unable to get past even the preamble of Larkin's claim. Dreher employed a single, combined microphone/receiver unit, which had the unacceptably poor voice-transmission disadvantages noted above with respect to Pritchett. Yet Roanwell persists again in telling us that the Dreher commercial failure is equivalent to the Larkin success.

We then come again to the Larkin claim's recitation that the transducer housing must be "adjacent to the wearer's ear." It is not so located in Dreher, whose entire unit fits *inside* the concha of the ear:



As pointed out by the district court:

"Dreher further lacks 'support means for detachably supporting the miniature microphone and the miniature receiver *adjacent to the wearer's ear . . .*'" (App. 1074)

But is that important? A proper question, and answered Yes, very much so. First: An operator may not move the Dreher structure from one ear to the other when one ear tires — lack of versatility. Second: A sick or absent operator may not have her headset worn by a temporary substitute, because the earpiece must be specially molded for each wearer — lack of versatility. Third: It lacked comfort — as Defendant's expert Martin testified:

[E]veryone present on the panel [the Air Force's 1956 Panel of Experts] had personal experience with insert-type ear phones. These were also known to be *somewhat uncomfortable, and since comfort was one of the main things we were working toward, it was not recommended that this combination be tried.*" (Martin, App. 762).

Recall here Roanwell's own Acoustics Laboratory's compliment to Larkin. The Larkin headset achieved

"a combination of
user comfort
low weight,
high versatility, and
adequate voice transmission."

(Roanwell Acoustics Laboratory Report, Tr. Ex. 20, Ex. App. 51).

The Dreher reference was unacceptable and *non-equivalent* on *three of those four counts*. Its *non-equivalence* came from the voice of Defendant's own expert — so *non-equivalent* that the Panel of Experts would not recommend that approach even for further R & D.

Plantronics' expert, Mr. Romanow of Bell Labs, similarly testified to the discomfort problems encountered in the Bell Model 61 headset, which was of the earmold-insert type. Although the Bell designers thought that they were solving the comfort problem, "in practice it turned out that there were pressure points developed." (App. 302) Also, "operators have an antipathy for inserting anything into their ear in supporting something from an ear insert." (App. 301) Human engineering problems are hideously difficult for foresight workers to solve, even when they are as highly skilled as the Bell Labs Technical Staff.

In summary, the district court made detailed findings about the differences in both structure and function between Pritchett and Dreher on the one hand, and the Larkin claim on the other; and to the extent that equivalence is relevant on the issue of anticipation, he correctly found *non-equivalence* between the references and Larkin's claim. (App. 1068-69, 1070-71 and 1073-74) These findings are supported by the above testimony. It is settled that

"a factual finding by the lower court that a particular device is or is not equivalent to another device is not to be disturbed by appellate judges unless that finding is clearly unsupported by the trial record. (Citing cases.)"

Triax Co. v. Hartman Metal Fabricators, Inc., 479 F.2d 951, 958 (2d Cir.), cert. denied, 414 U.S. 1113 (1973),

The district court's findings of non-obviousness of the Larkin invention are fully supported by the evidence

Having found that there was no anticipation of Larkin by the prior art, the district court proceeded to analyze the question of obviousness. In so doing it carefully applied the tests set forth by the Supreme Court in *Graham v. John Deere*, 383 U.S. 1 (1966), and by this court last year in *Timely Products Corp. v. Stanley Arron*, 523 F.2d 288 (2d Cir. 1975). Those cases announce two things important here:

(1) The level of ordinary skill in the art is determined by "factual inquiry." *Graham*, 383 U.S. at 18. Hindsight speculation, or guessing, has no part in the analysis. Subtle changes, which appear obvious later, are often not obvious at the time the invention was made, and usually represent the difference between success and failure in the useful arts.

"Nothing in this world is more obvious than that which is obvious by hindsight *after* the fact of making an invention." *Walt Disney Productions v. Fred A. Niles Communications Center, Inc.*, 369 F.2d 230, 234 (7th Cir. 1966), emphasis quoted.

Cases in point, where the prior art was ever so close by hindsight include Edison's light bulb and Bell's telephone. (See L. Dodds and F. Crotty, "The New Doctrinal Trend," 30 J. PAT. OFF. SOC. 83

(1948), which is re-printed in the white-covered addendum to Plantronics' first brief.)

(2) The way to avoid such hindsight judgment, and the injustices visited on patentees because of it, is to reject the simplistic reconstruction of references commonly offered by infringers years after the invention was made, and to concentrate on the facts of what skilled persons were actually doing and thinking *at the time*.

In *Timely Products, supra*, **this court** set forth three practical rules to aid in the analysis, all of which are in accord with the language and intent of § 103, and *none of which* condones the piecemeal reconstruction urged here by Roanwell. These practical rules are:

- (a) "The test of validity decreed by Section 103 is not the substantiality of the differences but the obviousness of the invention as a whole." 523 F.2d at 293, citing *In re Buehler*, 515 F.2d 1134 (C.C.P.A. 1975).
- (b) The factors of long-felt but unsolved needs, failures of others, etc., commonly called "secondary considerations," are not secondary in importance, but only in time or logic, i.e., you consider them *after* determining that there is a difference between the claim and the prior art. 523 F.2d at 294.
- (c) "If the evidence shows that a number of skilled technicians actually attempted, over a substantial period, to solve the specific problem which the invention overcame and failed to do so, notwithstanding the availability of all the necessary materials, *it is difficult to see* how a court could conclude that the invention was 'obvious' to such persons at the time." 523 F.2d at 294, emphasis added.

We add the emphasis to this court's "difficult to see" language, because of the almost totally contrary position urged here by Roanwell in the same phrase. Judge Conner found, after full analysis of the evidence and agreed facts:

"The record establishes that there was a long-recognized need for a lighter, more comfortable headset to eliminate the fatigue and pain, rather extravagantly termed 'ear torture,' involved in the wearing of all previously known headsets over extended periods. A number of organizations with access to the best minds in the field, including the airlines, the U.S. Air Force and FAA, as well as the industry suppliers whom they consulted, had been actively searching over a number of years for an answer to the problem, but had found none, despite the availability of all the components ultimately employed by Larkin.

"When Larkin's headset was publicly disclosed, it received almost immediate recognition as an elegant and ingenious solution. It enjoyed impressive commercial success. It revolutionized thinking in the headset industry, overcoming ingrained prejudices, and its concepts have been widely copied by competitors, one of whom aptly termed it the progenitor of a 'new generation of headsets.'"

* * *

"Indeed, as simple as the invention now appears, it would seem presumptuous to the point of arrogance to conclude that it was 'obvious' to persons of ordinary skill in the art, notwithstanding their lengthy and unsuccessful struggle to achieve such results."

(District Court opinion, App. 1089-91.)

It will be noted that the statements in that quoted passage are *findings of fact*, and are not reversible unless "clearly erroneous." (Rule 52(a), FRCP.)

Roanwell picks at some of those findings in its brief, but has not dared to say that any of them is clearly erroneous. Instead, Roanwell abandons the factual, historical analysis mandated by the Supreme Court in *Graham* and by this court in *Timely*, and argues instead:

- (1) That various differences between Larkin and the prior art, as viewed by Roanwell fifteen years later in 1976, would not "involve invention" (Br. 42, 43, 44); and
- (2) That "it is difficult to see" how a person apprised of certain items of the prior art could fail to realize what was needed to come up with Larkin's creation. (Br. 49, 52)

Any relevance of the first of these arguments (does not "involve invention") went out with the 1952 Patent Act, which substituted the sole test of nonobviousness. *Dann, Commissioner v. Johnston*, U.S., (Appeal No. 74-1033, decided Mar. 31, 1976). The story of how that happened is told by one of the statute's drafters, Judge Giles S. Rich of the CCPA, in his address "Laying the Ghost of the 'Invention' Requirement," which is reprinted in the white-covered addendum to our first brief. Other than the nonobviousness requirement which Congress enacted to replace various diverse court expressions, there is in the law no longer any requirement for that mysterious and elusive "quality of invention." The requirement is nonobviousness

to those skilled in the art *at the time* the invention was made. (35 U.S.C. § 103)

The second of Roanwell's arguments ("difficult to see how" various things wouldn't have been obvious), is interesting in that it flies directly in the teeth of this court's language in *Timely, supra*, that "it is difficult to see" how a device was "obvious" when it eluded aware, skilled persons for a long time in the face of need, as uncontrovertibly happened in the present case. Thus Roanwell and this court have each found things "difficult to see" in cases like this one. Roanwell, with 20-20 hindsight, can't see how the Larkin invention was not obvious; this court in *Timely*, and now the district court below, viewing the contemporaneous factual events in the industry, can't see how it could possibly have been obvious.

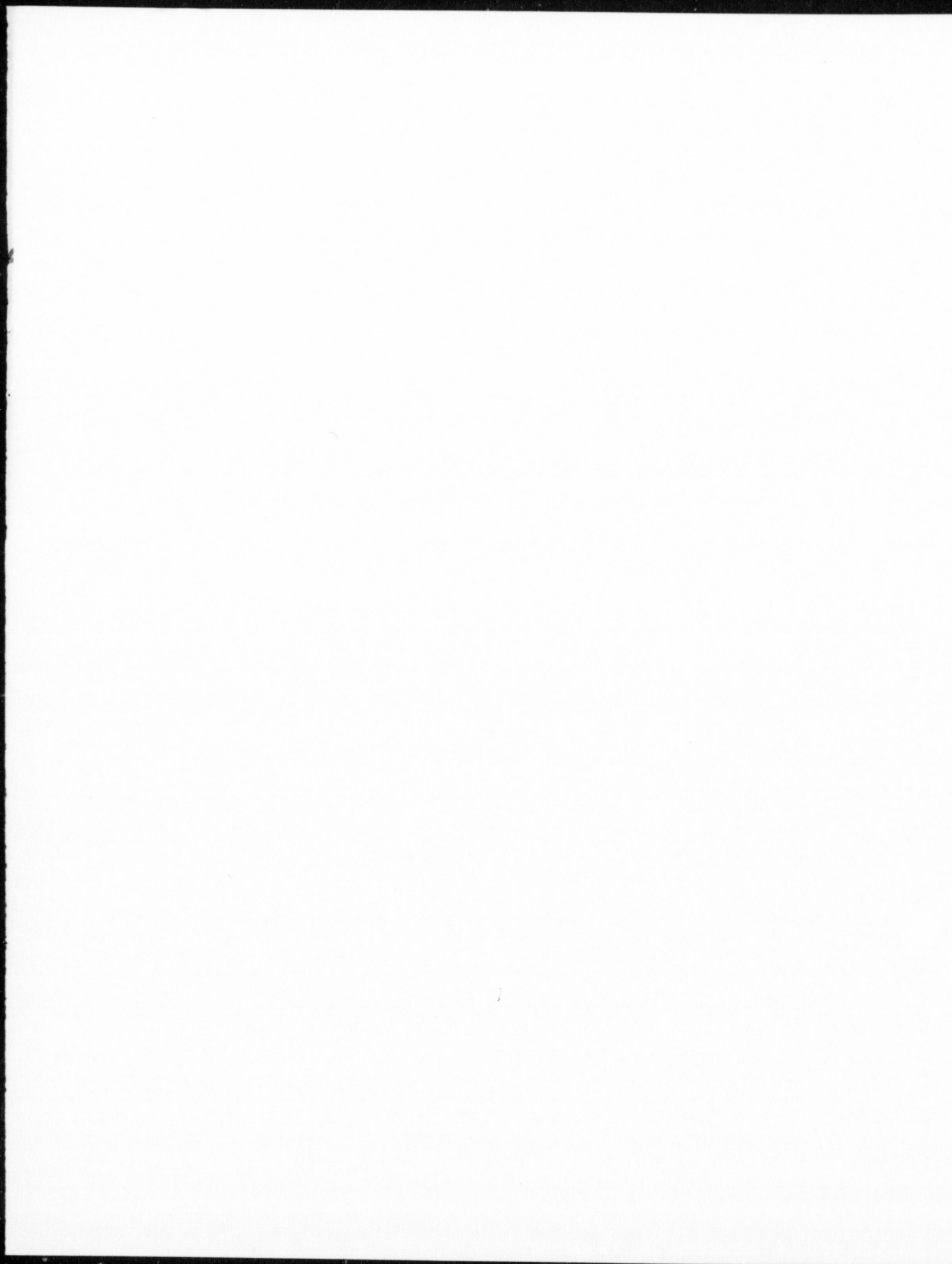
It is clear that the result reached is critically dependent on adherence to the principles announced by this court in *Timely* and followed in the district court: Stick to the facts; look at what people were doing in the industry before the invention appeared; look at their reactions to the invention when it appeared—not at what is said in court fourteen years later. Only in that way can resolution of the level of ordinary skill remain a "factual inquiry." *Graham v. John Deere Co.*, 383 U.S. 1, 18 (1966). And why the Larkin validity judgment should be affirmed, will not be at all "difficult to see."

Roanwell argues about where the prior art should have led, but ignores where it did lead skilled workers.

Roanwell persists in hypothetical combination-of-references arguments, and refuses to make the "factual inquiry" mandated by *Graham*. The Roanwell arguments, following the clear beacon of hindsight, totally fail to account for the facts of record, showing where these references actually led.

It is most difficult in any patent case to prove, fifteen or twenty years after failures of other skilled workers, just what prior-art knowledge those workers were and were not aware of. Absent clear evidence to the contrary, courts should conclude that well-established, well-





budgeted and highly experienced companies, such as Bell Labs, Telex and Roanwell in the headset field pre-Larkin, had *at least* the knowledge contained in widely known references. In the present case, however, the record shows a lot more about specific knowledge of the prior art now relied on by Roanwell, and where it actually led skilled workers.

(a) Olney and ARINC

Roanwell argues that a person of ordinary pre-Larkin skill would have found it obvious that he should isolate out of Olney's 1949 patent its statement that a single voice tube could be used in lieu of a noise-cancelling arrangement; that he should disregard Olney's earcap-lying-on-the-ear arrangement in favor of the optional ear tubes shown by ARINC; that he should violate ARINC's teaching of a boom-microphone mounted in front of the mouth; that he should employ two miniature transducers (not shown by either reference); that he should mount them stably and yet comfortably, a feature not present in either reference, as found by the district court and supported by the record.

It will be recalled that earcap-type headsets, like Olney's, were extremely uncomfortable to wear. Indeed, this discomfort problem, encountered by United Air Lines in its HS 33 headset (Ex. App. 45), was what led United to its world-wide search for a solution.

Similarly, Western Electric's then-standard WE52 headset (Ex. App. 22), shown opposite, was an earcap-type headset. It led to sore ears, causing operators to bend the headband for relief, which in turn led to instability in exchange for some comfort. (Romanow, App. 228-30)

Only by piecemeal hindsight reconstruction can Roanwell's selective extractions from Olney and ARINC lead to reversal of Judge Conner's validity holding. Roanwell's expert, Dr. Martin, was familiar with the Olney patent back in the 1940s and 1950s, the Olney headset having been the subject of a talk at the Acoustical Society meeting in 1944 and of a subsequent article in the *Acoustical Journal*. (Martin, App. 613) Olney was certainly no obscure reference. Yet where did it lead in view of ARINC's 1957 publication? Let's consider Telex.

Telex Corporation was and is a leading manufacturer of headsets and other telecommunication equipment. Workers at Telex knew about ear tubes since at least the mid-1950s when its Twinset appeared — its Gilbert patent thereon (Ex. App. 166) having been filed in 1949. Yet

when Telex was called upon to satisfy United Air Lines' needs in 1961, it furnished a headset not with a voice tube as shown in Olney and known to everyone in the business;* but an unacceptable headset with front-mounted boom mike (Ex. App. 171):



BOOM-MIKE HEADSET This lightweight, 3½-ounce, two-way headset is ideally suited to airline, ham radio, television, ship-to-shore and switchboard use. Parallel connected 500-ohm receivers are mounted on stainless spring-steel headband. Adjustable tone arms transmit sound directly to ears—no heavy, sweaty cans. Mike is mounted in shock absorbing tenite at end of fully adjustable boom—angled for best pickup. Choice of general purpose 50 ohm carbon mike (output 30 db above 1MV) or 256-ohm noise cancelling differential magnetic mike (output—85 db below 1 Volt/Microbar).

BE SURE TO ORDER BY CATALOG NUMBER

| Stock Number | Catalog Number | Catalog Number |
|---|----------------|-----------------|
| | | Noise |
| 18250 Headset w/double receivers & 5' cord w/terminal clips less plug..... | CME-12 | Cancelling Mike |
| 18250 Headset w/single receivers & cord as above..... | CME-12 | W-12 |
| 18240 Headset w/no receivers, mike only & cord as above..... | CME-1 | W-11 |
| 18230 TV type headset w/double receivers, split phone & cord as above..... | CME-13 | W-10 |
| 18200 Headset w/double receivers, no cord..... | CME-13 | W-13 |
| 18220 Headset w/single receiver, no cord..... | CME-1 | Not Available |
| 18235 Headset—split phone, no cord..... | CME-1 | |
| Lugs Cord unit w/term. packed separately, no plug..... | CME-35 | |
| 9261 Aircraft-type cord w/PL-55 and PL-68 or equiv..... | CME-3 | |
| 12061 Aircraft-type cord w/push-to-talk switch..... | CME-3 | |
| 9262 Standard cord w/PL-68 or equiv..... | CME-3 | |
| Lugs Switchboard-type cord w/standard plug..... | CME-4 | |
| Lugs "Y" cord, 6 conductor, for headset #18235 w/term. packed separately, no plug..... | CME-35 | |
| 3280-22 *Cord unit for receivers for noise cancelling mike equipped headsets (order plug separately)..... | CMM-1 | |

It was aimed at a large market, as stated in the ad. Roanwell says it was comfortable. (Br. 51, 57) Perhaps it was relatively so, and to this extent it may have overcome most of the discomfort problems of earcap headsets like Olney's. But the record establishes that it was *grossly unstable*. United's Leonhardt testified about it:

"If you placed it there for talking and moved your head around to do other cockpit duties, this particular one would walk away or move, it would not stay there, it would reduce your output in transmissions to the ground." (Leonhardt depo., Ex. 150, p. 25)

It was rejected by United.

Roanwell now argues the selective extraction-and-substitution of various parts from the prior art; but Telex' people, *who were there at the time*, didn't see it. It was not obvious to persons skilled in the art.

*Defendant's expert, Dr. Martin, conceded on cross-examination that voice tubes were known to just about everyone in the pre-Larkin headset business. (App. 709)

The evidence thus fully supports Roanwell's 1962 praise of Larkin for achieving BOTH comfort and adequate voice transmission, i.e., positional stability. (Ex. App. 51)

Further, Roanwell's 1976 Olney-ARINC argument fails to inform the court of where the parties in this case found the ARINC publication. It was in United Air Lines' own file on their search for a better headset! Though voice tubes were known to almost anyone having to do with aircraft or acoustics prior to 1960 (Martin, App. 529), United's engineers, having both the ARINC publication and an urgent need (Ex. App. 23), *did not see* that "all you had to do" was modify ARINC to add a voice tube. The only one who purports to "see" that selective reconstruction is Roanwell at trial in 1975, and on appeal in 1976.

By any stretch of the words "factual inquiry" in *Graham*, Roanwell's Olney-ARINC argument must fail.

(b) British patent and Telex

Perhaps sensing the factual defeat of its Olney-ARINC argument in view of Telex' boom-mike failure as above discussed, Roanwell's brief continues its piecemeal extraction process and finds a passage in British patent 716,801, which supposedly cures the instability of the ARINC/Telex structure by using an acoustic horn instead of a boom microphone. Unfortunately, although this British horn structure was widely known (so Roanwell tells us — Br. 57), it didn't show Telex how to satisfy United. We don't know for sure that Telex' workers knew about the British horn headset.* The record is silent on that point; but the burden of proof is on Defendant, 35 U.S.C. 282, so the court must not *assume* that a company of Telex' stature was ignorant of the widely known horn headset.

In any event, the record *does* show that at least *one* established headset manufacturer, Roanwell, both knew about and tried the very acoustic-horn arrangement of the British patent before learning about Larkin. Roanwell tried it in its 1961-62 "Lightweight" project, built

*We do know that when the British saw Larkin, they called it a "great step forward in headset technique"; the voice tube "amazingly efficient." (Ministry of Aviation Report, Ex. App. 1212-13.)

a prototype, and abandoned it in favor of a boom microphone for unexplained reasons. (Foley, App. 378-79; Roanwell brief, p. 59). Persisting in its refusal to undertake any factual inquiry on the level of ordinary skill, Roanwell's present brief tells us its own experimentation with a horn-type headset, which led it away from the use of Larkin's combination, is "irrelevant" (Br. 59).

Graham mandates a factual inquiry, a looking at the actions of the people "who were there." The British horn-type headset led Roanwell's experts not to Larkin, but to a front-mounted boom mike arrangement in a half-pound circumaural headset, shown later herein.

Now Roanwell has adopted headsets admittedly within the Larkin patent's scope.

"The use of an invention by another who has been trying to develop a similar product is evidence of the validity of the patent."

Neff Instrument Corp. v. Cohu Electronics, Inc., 298 F.2d 82, 87, n.5 (9th Cir. 1961), citing *Colgate-Palmolive Co. v. Carter Products, Inc.*, 230 F.2d 855 (4th Cir.), *cert. denied*, 352 U.S. 843 (1956).

Roanwell's argued reconstruction of references, by contrast, "is not relevant to obviousness." *Union Carbide Corp. v. Filtrol Corp.*, 170 U.S.P.Q. 483 (C.D. Cal. 1971), *aff'd*, 197 U.S.P.Q. 209 (9th Cir. 1973).

***Roanwell's attempt to explain away
prior art failures by urging "no market"
is belied by Roanwell's own activities***

At several points in its brief (pages 35, 38, 54 and 55, for example) Roanwell sets forth the proposition that at the time Larkin invented Plantronics' MS-50 headset, other manufacturers did not see a sufficient market to justify any substantial efforts to develop such a headset themselves.

Not so, as shown by the agreed findings and undisputed evidence in this case.

The most telling evidence against Roanwell's present assertion that the headset industry did not see any substantial market for a lightweight headset in 1961, is told by Roanwell's own witness and engineer, Mr. Foley.

During the period 1961-62, before Roanwell had knowledge of Larkin's MS-50 headset, a Roanwell design team was hard at work to develop its Lightweight headset. (Foley, App. 369-70) Mr. Foley testified as follows regarding the market *then perceived by Roanwell* for such a headset:

"Q. What was the market aim of that headset?

"A. The aim was for a lightweight headset that could be used in telephone communication, could be used in television, could be used by various military agencies. It was a very wide type of expanse that we were looking for use of this particular headset." (Foley, App. 372)

Mr. Foley substantially verified (App. 375-76) the accuracy of a Roanwell publication indicating that the total headset market, as *Roanwell* perceived it in the early 1960s when its "Lightweight" project began, included some twenty distinct industries or sub-markets, with the largest market of all — telephone operators — first on the list (Ex. App. 111):

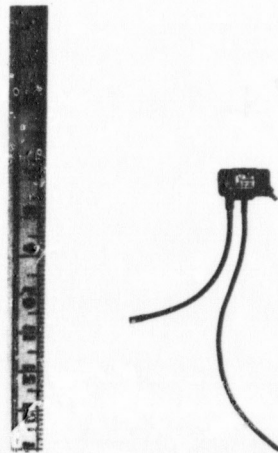
- Telephone Operators
- Telephone Linemen
- Leak Detector Operators
- Mobile Radio Operators
- Base Station Operators
- Radio and TV Broadcast Production
- Commercial Jet Crews
- Air Traffic Control
- Private Aircraft Pilots
- Missile Systems Crewmen
- Rocket Launch Crewmen
- Mine Detector Operators
- Sonar Operators
- Military Aircraft Crews
- Ground Support Crewmen
- Language Laboratories
- Organ Consoles
- Auditoriums
- Home Use, Hi-Fi and TV

Despite this perception of enormous market that has proved to exceed twenty million dollars per year for Larkin, Hutchings and Roanwell's infringing headsets, it will be recalled that Roanwell, a pioneer company in headset design since 1948, had nothing with which to answer United Air Lines' "urgent" need (Agreed Findings P-3.15, App. 74; and P-3.21, App. 80). But it responded to United's request by commencing to develop, and it came up with the large, *heavy* "Lightweight" unit. (Wgt. 8 oz.+)

It is interesting to note that Roanwell, who now argues there was no perceptible market, "reacted to the point of envy" when its engineers and officers first saw Larkin's headset. (District court opinion, App. 1088.) This finding is not challenged by Roanwell. Perhaps the reason for Roanwell's envious reaction was that the headsets emerging from Roanwell's "Lightweight" project weighed half a pound or more, and were totally dissimilar to Larkin; compare the Larkin headset with the Roanwell "Lightweight," shown to nearly the same scale (the "Lightweight" is actually scaled down more, as shown by the rulers):



Roanwell Lightweight



Larkin MS-50

"Lightweights" have sold very poorly relative to Larkin.*

*The parties agreed before trial to treat 2,500 units per year as the average number of Roanwell "Lightweights" sold. This is less than one-twentieth of Larkin's sales.

Another example of a company who was aiming at a large pre-Larkin market was Telex. Telex' ad (Tab HH of Roanwell's brief) announced that Telex saw as its market for its new headset, at least: "Airline, ham radio, television, ship-to-shore and switchboard" users. The Telex headset failed to satisfy United, and so far as the record shows, was not a success anywhere.

Further immediate market was represented by the FAA, whose 1963 report (Tr. Ex. 22, Ex. App. 53) recited the long-felt need of FAA ground controllers for a lightweight headset:

"For many years the Agency has sought an improved headset which could be worn by controllers for long periods of time without discomfort and yet provide adequate transmission and reception capabilities." (Ex. App. 60)

The FAA expressly communicated these needs to the headset industry. The FAA report states:

"Numerous attempts have been made to provide improved headsets both by requests to the telephone companies and by investigation of commercially available items for possible use by air traffic controllers." (Ex. App. 60)

Similar needs were felt at NASA:

"We had a lot of complaints about the WECO 52A headset from our operators' viewpoint, particularly directed toward fatigue." (Metcalf depo., Tr. Ex. 148, p. 17.)

In the telephone industry, the Bell System experience was that, in order to avoid "pressure points," i.e., places on the ear that got sore after a while of headset use, the operators bent the headbands of the then-standard WE 52 (Ex. App. 22), and this led to instability. (Bell Labs' Romanow, App. 228-30) The Bell system was a large potential market, perceived by Bell Labs and outsiders alike.

The Roanwell argument of non-perception of a market is wholly untrue, contra: to the district court's findings, and must be rejected.

Defendant's President gave strong testimony in support of patentability of Larkin

In its appeal brief (p. 65), Roanwell for the first time in the case argues that its President Powers' lavish 1962 tribute to Larkin's invention, "the first of a new generation of headsets," really meant something else entirely. But Roanwell cites no evidence of what else.

Mr. Powers was then a man of fifteen years' practical experience in headsets. He is no hindsight theoretician; he is one of "the men who were there". In the real-world action.

If he meant something else in his lavish tribute to Larkin, *he* should have been the man to say so, rather than his counsel only on appeal.

Defendant's counsel have argued "no invention would be involved" in doing this or that—with no factual support. Why did not Mr. Powers, who had lavishly praised Larkin's effort, come and explain those speculations of counsel? His everyday work office at the time of trial was in lower Manhattan, virtually within walking distance of Foley Square. His failure to appear amounts to strong testimony in support of Larkin's patentability.

"Where it would be natural under the circumstances for a party to call a particular witness . . . and he fails to do so, tradition has allowed his adversary to use this failure as the basis for invoking an adverse inference." McCormick, *Evidence* § 272, at 656 (2d ed. 1972).

In context of what he did say in 1962, Mr. Powers' silence before the court in 1975 may possibly be the most powerful testimony in the entire case.

Roanwell quibbles about the district court's findings of failures of others

Roanwell's brief contains an extensive effort (pp. 54-66) to downplay the revolutionary success enjoyed by the Larkin invention and the repeated failures of pre-Larkin workers as found by the district

court. (App. 1089-90; historical detail at App. 1077-89) These arguments by Roanwell vary from mere quibbling to absolute falsity.

Roanwell quibbles over the exact scope of the Panel of Experts' assignment, in order to explain the Panel's 1956 failure to devise anything acceptable to the Air Force or to anyone else, though *all the Larkin components were known to them*. Roanwell excuses that failure by urging that the helmet environment required by the Air Force made the Panel's problem so different from Larkin's and United Air Lines' as to be irrelevant. The undisputed fact, however, is that the *principal* problems faced by both the panel and Larkin were the same: Comfort, stability and adequate voice transmission. The report on the Panel's work reads:

"Objective of the Program

"The basic purpose of the program was to discover and explore improved means for voice communication during Air Force Operations. * * * Improvements are desired which will:

"(a) decrease the size, weight and discomfort associated with the equipment which must be worn on or about the head of the flier."

The very first aims of the Panel, and of Larkin, were the same. Query: Does the further requirement of use-within-a-helmet satisfactorily explain the utter failure of the country's leading experts to come up with any headset configuration which was ever put to use, by anybody, anytime, in any environment? We think not.

* * *

Roanwell urges that Dreher and his Ohio State Research workers didn't fail — that they developed a "viable" headset. Yet it is clear that it had significant deficiencies, and the Dreher headset has never been seen on the market. (Defendant's expert Martin, App. 762, 784)

* * *

Roanwell denies that Roanwell failed. Yet its "Lightweight" headsets, designed and sold by an established company in an attempt to solve the same problems of weight and discomfort addressed by Larkin, have admittedly sold less than 1/20th those of Larkin, offered by a fledgling company.

Roanwell excuses itself by saying its "Lightweight" is circumaural, i.e., has a pad surrounding the ear. That is no answer to its poor showing; it is admission that the effectiveness of ear tubes was not obvious to Roanwell.

• • •

For an example of complete error, consider Roanwell's statement (Br. 55):

"Nor is there any evidence of *any* unsuccessful attempts by others to design a lightweight headset — except that there was not enough of a market to warrant the final engineering or packaging of the units proposed." (Emphasis added.)

To show the falsity of that statement, we need consider only one case: United Air Lines. Though its needs were "urgent" (United's word — Ex. App. 23), all it could devise was the Mentzer mockup (Ex. App. 21), which was never developed into an operative headset. (Agreed Finding P-3.14, App. 74)

No failures?

How about the Telex boom-mike headset (Ex. App. 171), so heavily relied on by Roanwell in arguing obviousness of Larkin? "*Ideally suited* to airline, ham radio, television, ship-to-shore and switchboard use," said Telex. (Roanwell brief, Tab HF.) It was rejected by United (App. 176), and there is no evidence that it was ever purchased by anyone, despite Telex' large perceived market.

Roanwell's effort to dampen Larkin's market impact is wholly contrary to the record.

***Plantronics invests \$350,000;
Roanwell covets the return thereon***

Roanwell seeks to demean the Larkin invention by pointing out Plantronics' humble beginnings and financial losses in the early years of marketing the MS-50. (Br. 55) Here, too, Roanwell mis-states the record.

The high cost of R&D, capital investment in manufacturing plant and tools, even before the inflation of the later '60s and 1970s, was in-

deed substantial. Plantronics *spent* large sums in developing, tooling up to make, and making the MS 50 — over \$300,000 in the first year.

Plantronics had no established trademark, no track record for reliability. Living largely on borrowed money, it had nothing to suggest permanence.

Roanwell, Telex, Bell: Those were the names people knew. Between them, they had market might enough to sell the proverbial ice box to the eskimo.

Bell had never before bought an outside-designed headset, was very slow to buy from an "upstart" company. Time delays; money going out, none coming in.

The FAA did extensive comparison trials between Larkin and the new Bell Y-1 (designed nearly contemporaneously with Larkin) before it would buy. — Time consumed, in which money is going out and nothing is coming in.

Plantronics, like all new companies, was living on hope and prayer, for they did not have anything else but Larkin's idea.

But after the studies by Bell, FAA, NASA and United. Then what?

Then, this "upstart" company, with no brand name, no track record for reliability or permanence, drove Bell's best new effort (the new Y-1) and then Roanwell's best (its new Lightweight) into substantial market oblivion. That is why Roanwell itself reacted to the Larkin MS-50 "to the point of envy" in 1962. (App. 1088)

But Plantronics did not "lose" \$350,000. In the larger sense that was money *invested* in developing a new idea, preparing to make it, and bringing it to the market. From there, it ran on its own.

The Larkin invention injected new blood, new competition, into an established industry. The investors risked a lot of money on a brand-new business, to develop Larkin's invention and to obtain a valid patent.

Now Roanwell would like to reap where it did not sow, so that Roanwell can taste the fruits of Larkin's invention. If Title 35 is to mean anything, this court must not permit that to happen.

B. ENFORCEABILITY

Roanwell seeks remand to the district court for a determination of facts with respect to an alleged fraud on the British Patent Office in connection with a British Larkin application for a patent not here in suit, and the effect of a European license based thereon. While each patent relates in its respective country to the same invention, there is admittedly no connection between the British patent and the U.S. Larkin patent here in suit, which was validly issued under U.S. law and in no way refers to the British patent.

Plantronics denies both the fraud and the legal relevance of Roanwell's pleading on the point.

Background

The application for the Larkin United States patent involved in this case, was filed December 11, 1961. Nearly three years later, a Larkin application for a British counterpart patent was filed.

Plaintiff Plantronics and S. G. Brown, Ltd., of England negotiated in 1964-65 a contract dated February 5, 1965, creating what may be called a joint venture to develop markets in England, France, Italy, Belgium, Germany and Holland for lightweight headsets.

The contract contemplated Brown's use of Plantronics' manufacturing technology, improvements in both manufacturing and products resulting from Plantronics' on-going R&D, and other support know-how, by which Brown might manufacture in England to Plantronics' design and specification and sell in such foreign markets. The group of countries was later expanded to include Scandinavia and select British Commonwealth countries.

While the Plantronics-Brown 1965 contract contemplated that Plantronics would "seek patent coverage" (which would be licensed to Brown) in all the therein recited countries, no patent applications were filed in any of those countries other than the previously filed British application.

The Brown effort in England started with Plantronics' 1965 disclosure of product specs and manufacturing and other technology to

Brown and Brown's efforts to manufacture and sell (e.g., to the British Post Office). But the effort floundered, resulting in a notice of termination in 1967 by reason of Brown's failure to either earn or pay the \$2,000 per year minimum royalty. An effort at novation was attempted with a new contract in 1968, but Brown continued to flounder and the whole venture was finally terminated in 1972.

Defendant Roanwell had no part in either of the Plantronics-Brown contracts of 1965 and 1968.

The contracts did not license the Larkin patent here in suit, but only foreign patents.

In 1974, Roanwell first submitted evidence to Plantronics in the form of Affidavits from librarians in Great Britain, that certain Plantronics ads depicting the Larkin headset had in fact reached England before the British filing date. Thereupon, the British patent was promptly surrendered.

Roanwell has charged that the British Larkin patent not here in suit was obtained in the now-popular phrase "by fraud" on the British Patent Office, in that the inventor is alleged to have known of events which would constitute bars to patenting in England, i.e., United States publications now believed to have reached England before the British filing date.

The district court, upon Plantronics' motion before trial, dismissed Roanwell's defense based on the British patent. Although Judge Conner's opinion on the subject was not filed the second day of trial, the parties were informed by telephone during the week before trial that the motion had been granted. Accordingly, Plantronics did not call any witnesses or adduce any other evidence to negate the fraud charge, as it was otherwise prepared to do.

The district court's ruling was correct

In dismissing Roanwell's asserted defense based on the British patent, Judge Conner did not reach the question of whether there was any fraud. He noted that:

"The courts have consistently ruled that fraud in obtaining one patent will not render unenforceable other patents in common

ownership, even where the patents cover closely related inventions. [Citing *Saxton Products, Inc. v. United States Telephone Co.*, 182 U.S.P.Q. 608, 609 (S.D.N.Y. 1974).] (App. 59)

The Sixth Circuit, in *Noll v. O.M. Scott & Sons Co.*, 467 F.2d 295, 302-303, n.6 (6th Cir. 1972), *cert. denied*, 411 U.S. 967 (1973), held that alleged misrepresentations to the Patent Office during prosecution of one U.S. patent application, would not affect even a related U.S. application, but

"could only invalidate the patent in whose applications the assertions were made." * * * There can be no defense based on "misuse in the air." the misuse must be of the patent in suit.' *Kolene Corp. v. Motor City Metal Treating Inc.*, *supra*. 440 F.2d at 85, 169 U.S.P.Q. at 82-83 [6th Cir. 1971]." 467 F.2d at 302-303, n.6, 175 U.S.P.Q. at 398.

Cases like the 6th Circuit's *Noll* hold that each U.S. application must stand on its own footing. *A fortiori*, a U.S. patent and a foreign patent must do so. The Fourth Circuit so held, in *S.H. Kress & Co. v. Aghnides*, 246 F.2d 718 (4th Cir. 1957), stating:

"whether or not on another occasion [plaintiff] * * * made an inconsistent claim in *Canada* to obtain a patent there, is an issue that we need not decide. If he made a misstatement there, this might bear on the validity of his *Canadian* patent.

It would not alter the fact that what he told the United States Patent Office was the truth and that the patent here was obtained without deception or fraud.

Even if we were to assume what we are not prepared to adjudicate, that the inventor's representations to the *Canadian Patent Office* were untrue, this misconduct would not be so closely related to the proceedings in this country and the issuance of the patent to him here as to invalidate the grant or to constitute such unclean hands as to disentitle him to the relief he asks in this case." 246 F.2d at 725, emphasis supplied.

The district court regarded the *Kress* case as presenting a situation factually indistinguishable from the present one. (App. 60) That is plainly correct, and Roanwell apparently does not seriously challenge it.

Roanwell's purported distinction on the ground that Plantronics was seeking to "extend the monopoly for its U.S. based invention"

is groundless. Inventions are incorporeal, and are not "based" anywhere. An invention can be made, sold and used anywhere, for example in England, where Brown was to do just that.

Roanwell cites no authority whatsoever for the proposition that misconduct in connection with foreign patent proceedings can have anything to do with enforceability of a U.S. patent. In fact, at the pre-argument hearing on the present appeal, Roanwell's counsel, Mr. Clark, admitted that Judge Conner had correctly applied the many cases cited in his memorandum opinion on this issue.

With respect to the two European licenses to S.G. Brown, Judge Conner correctly noted that the agreements had no actual effect on the market, and that the latter of these agreements was terminated on August 30, 1972 (now nearly four years ago; the three-year post-termination non-competition clause, lawful in view of the trade-secret information transferred, has also expired); and hence any misuse which could possibly have existed had long been dissipated. (App. 60)

Roanwell erroneously argues that "the only colorable power for this constraint, insofar as it applied to the United States," was the Larkin U.S. patent. No support is given for this argument. It is not contended by Roanwell that the S.W. Brown agreements granted any license of the U.S. Larkin patent (although it may have been identified in the agreements.) The agreements provided for transfer of know-how (Ex. App. 1018, ¶2A); later improvement inventions (Ex. App. 1018, ¶2B); personnel (Ex. App. 1018 ¶3); and parts (Ex. App. 1018, ¶4). With all of these rights flowing to Brown, and a license under the U.S. Larkin patent NOT flowing to Brown, Roanwell's argument that the patent was the basis for any contract restraints on Brown is wholly unfounded.

The quote (Br. 74) from the writings of Plaintiff's present attorney, Mr. Arnold, is similarly beside the point. First, it refers to antitrust law; no antitrust violation has been suggested here by Roanwell. Second, the quoted passage indicates that fraud in a U.S. patent cannot be cured under the law of purging-misuse. That was believed to be, and likely is, correct — if a particular U.S. patent is fraudulently obtained, *that* patent is invalid or unenforceable, and the defect can-

not be cured. The same would *not* be true of an agreement alleged to illegally extend the scope of a properly obtained patent: The misuse is purged by termination plus dissipation of the effects, if any there were. See, e.g., *Metals Disintegrating Co. v. Reynolds Metals Co.*, 228 F.2d 885 (3rd Cir. 1956).

None of that, however, has anything to do with alleged fraud in obtaining a foreign patent.

Roanwell has made no offer of proof whatsoever, either in the district court or in this court, to show that there ever were any restrictive effects of the S.G. Brown agreement, either on Roanwell or on anyone else.

The Roanwell request for remand of this spurious issue is plainly frivolous, and should be denied.

III. HUTCHINGS UTILITY PATENT 3,548,118

Roanwell admits

Trial Court errors of fact

In connection with Larkin, it is striking that neither party has found significant fault with specific findings of fact.*

By contrast, with respect to Hutchings, **both parties are in agreement that the trial court made clearly erroneous findings of fact.**

It is hard to explain how this could be, unless the trial court opinion on the Larkin patent was written when the judge had time for deliberate careful study, and the opinion on the Hutchings patents written many months after the trial.

Let us address first, the parties' agreement that the trial court made clearly erroneous material findings of fact.

*Certainly Roanwell found fault with the conclusions the trial court drew as to Dreher, the British patent, etc., relative to what they teach those in the art. But we cannot recall where Roanwell ever expressly urged any "clearly erroneous" finding, either of a factual detail (like the date of Defendant's learning of the StarSet over-the-ear feature) or any other thing which can properly be called a finding of fact.

***Trial court finds Roanwell and Unex
over-ear sketches were made
before learning of Plantronics' StarSet.***

***Parties join in urging
Roanwell already had model of
Plantronics' over-ear StarSet.***

As an opener: Be advised that the "MS-50-80" is the same identical set that was later renamed "StarSet". Missing that point could possibly be the basis for the trial court's error, which we now address.

The trial court opinion, beginning last paragraph of App. 1108, reads — the admitted errors being underscored:

"These efforts met with only limited success; Roanwell apparently learned that Plantronics' "second generation headset" employed a post-auricle capsule but did not discover such details as the over-ear-voice tube. Nevertheless, when Roanwell engaged the assistance of Unex Labs in the development of what one of its salesmen candidly termed a "me-too" version, Unex's exploratory sketches included one model having an over-ear voice tube and an under-ear tube. It was not until several days later, at an industry show [the USITA show], that the Plantronics StarSet was first publicly disclosed and Roanwell learned the full details of its construction."

Contrary to the underscored portions of the above quote, Roanwell heretofore joined Plantronics in urging the facts that

- (1) Roanwell had in hand a publication containing full disclosure of the StarSet in an ad before July 24, 1969;
- (2) Roanwell had circulated an analysis of the StarSet to all its relevant personnel July 24, 1969;
- (3) Before the end of August 1969 Roanwell had already made a wooden model of the StarSet from the ad so the marketing people could try it on, check balance, etc.;
- (4) Unex was employed by Roanwell by letter of September 26, 1969 (Ex. App. 582). All Unex drawings were of later date, the first over-the-ear ones being October 14, 1969;
- (5) The subject industry show was October 19-21, 1969.

We quote **Defendant's** post-trial brief, page 75:

"This * * * has reference to the USITA show, held October 19-21, 1969 (DX-J, p. 25) — but the first Unex drawings with an over-the-ear voice tube and under-the-ear tube are dated October 14, 1969 (PX-140 pp. 78, 79 [Ex. App. 598, 599] several days before the show.

"* * * Defendant had a wooden model of the over-the-ear headset, made from a StarSet ad, by the end of August 1969 (Tr. 220, 759-61); if the marketing people * * * wanted to try it on to check it for balance or whatever, they could have done so long before the USITA show and before defendant ever engaged the services of Unex. (Tr. 758). In any event, however, the Unex drawings of an over-the-ear voice tube unit were prior to that show."

The district court's error in finding of fact as to date of Defendant's learning of the StarSet, changes the theme from one of independent conception evidenced by Unex sketches (as found by the trial court) to one of copying after a model of the StarSet was in hand for trying on and checking balance, etc.

The judgment of all the other evidence about the Hutchings invention must have been influenced by that error.

It is a *very* material, admittedly clearly erroneous finding of fact.

* * *

***Trial court found that the
StarSet achieved no instant acclaim.
Defendant agrees that this
understates the success of StarSet.***

Recall in Plantronics' original brief, Plantronics urged its Fourth point of "clearly erroneous finding," the trial court finding (Opinion, App. 1108) that the StarSet enjoyed "*no* instant acclaim". The product was first offered in late 1969. Plantronics pointed out

- (1) FAA 1970 evaluation and compliments within less than a year of the StarSet's first marketing, "the most suitable and acceptable instrument used to date."
- (2) Western Electric trials in early 1970, field trials on 4800 units, resulted in highly favorable reaction that "surpassed AT&T's expectations." Those were the expectations arrived at *after* seeing the unit, and even then there was surprise at the acclaim -- which evidences that even seeing the StarSet was not to fully believe it in 1970.
- (3) The StarSet was awarded in 1970 the Industrial Design Award of the Western Electronic Show and Convention.
- (4) The StarSet went to market a few months ahead of, but basically against, the competition Bell Labs' Model 61 offered by the industry's mightiest market power -- and the StarSet literally blasted the Bell Model 61 into oblivion, while itself selling many tens of millions of dollars worth.
- (5) Ma Bell having adopted the StarSet and offered it to its customers, discontinued the Model 61; and to Bell you don't sell by advertising, but by the "acclaim" of product approval.

Roanwell was apparently so embarrassed that the trial court had found

"no instant acclaim"

that Roanwell's Brief on this appeal, p. 26, admits Roanwell is

"inclined to agree [with Plantronics] that this finding understates the commercial success the StarSet has achieved."

In an effort to get the judicial feel of the real world of invention by contrast with ivory-towered hindsight reconstructions, both the Supreme Court in *Graham* and this Court in *Timely Products* have put relatively high significance upon what the industry thought about an invention, and what the industry impact and action was.

An admittedly clearly erroneous finding of "no" instant acclaim, when there was much acclaim, can only have had a major influence on the conclusion of patent invalidity.

***The trial court found the record
established no driving of competitors
from the market.***

But it did.

Plantronics' original brief, p. 59, treats the erroneous finding that the record established "no driving of competitors from the market."

Defendant has not joined in the conclusion that this is a clearly erroneous finding, but:

The Plantronics StarSet and Bell model 61 were offered near the same time, the StarSet in late 1969 and the model 61 in early 1970, both in direct competition with Larkin; and Defendant's brief, p. 27, does admit that the sales of both got off to a start, the sales of the StarSet continuing to rise "while the Model 61 sales declined to zero" even though the 61 was offered by Ma Bell as its own product to all its operating companies.

Since both units were seeking to serve the same market in head-to-head competition, that admission is as close to a confession of clearly erroneous finding as one is likely to come by. — Again on a point which the Supreme Court in *Graham and Johnston* and this court in *Timely Products* have determined to be highly probative to the patentability of an invention.

But the persuasions go much further: As against the StarSet, the Larkin MS-50 was a competitor even though offered by the same company. Clearly, every Hutchings sale, hundreds of thousands of them, has been a lost Larkin sale. So in very important part, Hutchings has been replacing hundreds of thousands of Larkin MS-50s.

That is another story of relevant market impact of the Hutchings invention that cannot be disregarded: Bell's 61 totally, and Larkin MS-50 partly, were driven from the market by Hutchings.

Which proves Hutchings was good enough, that if *anyone* of any even extraordinary skill in the *could* have thought of it, they would have:

- in 1960 when United Air Lines was calling for help;
- or in 1961 when Bell was designing its Y-1;

- or in 1961-2 when Roanwell was designing its "Lightweight";
- or in 1962-3 when Plantronics and Audiotone were together designing and field-testing the MS-43;
- or in 1962-3 when Telex was designing the Flygstad;
- or in 1963-8 when Bell Labs was designing the 61;
- or in 1969 when Roanwell initiated its crash "MOH" project, only to end up copying Plantronics.

All these men in the real world, these men "who were *there*," had the interest and the incentive and had knowledge of all the component parts to have built Hutchings.

These "men who were there" *could* have built Hutchings; but they did not.

The only possible answer is that they could not figure out how. Hutchings was not obvious.

***Roanwell copied not only Hutchings' design,
but his utility invention as well.***

***Roanwell R-71 is not
equivalent to prior art,
nor to R-70.***

Roanwell's Brief urges strong innuendo that it invented independently and did not copy Hutchings' utility invention (as apparently it now concedes it copied Hutchings ornamental exterior design). It is important to note: the brief does not ever flatly deny copying the utility invention as well as the design invention. (Roanwell Br. 27-28.)

Also the Roanwell brief puts more weight on one point than upon any other: That the mouth-tube-under-the-ear model R-71

- (a) is the same as the prior, art, and
- (b) identical to the mouth-tube-over-the-ear model R-70; and
- (c) sales 6-to-1 favoring R-71 prove there is nothing in the invention.

(See Roanwell Br. pp. 17, 20, 26-27, etc.)

On each of these vital topics the only way properly to understand what is real to the men in the art and what is counsel's spurious argument, is to trace the history of activity of those in the art, just one more time with the focus addressed to those topics.

The evidence is clear beyond a reasonable doubt that:

- (1) The prior art that failed did not have adjustable hooks top and bottom and is different from the Roanwell R-71.
- (2) Defendant's lead headset designer and designated witness Mcl, himself observed that each the 70 and 71 have advantages and disadvantages over the other (App. 931). They are not the same but-for reversal of parts.

These are the points that will appear from a review of what was being done in the real world at the times the invention was not, and was, made.

CHRONOLOGY OF HEADSET DEVELOPMENT VIS-A-VIS HUTCHINGS

There are only two ways to judge obviousness:

- (1) the reality of history,
- (2) the speculation of hindsight.

Paraphrased from *Timely Products Corp. v. Stanley Arron*, 523 F.2d 288, 294 (2d Cir. 1975).

. . .

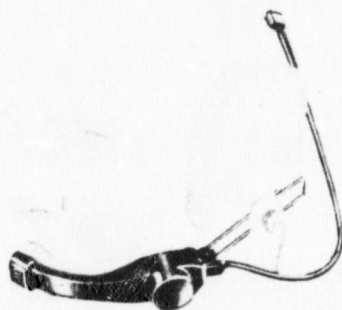
- | | |
|-------------------|--|
| 1947-48 | Bell Telephone Laboratories invents the transistor. |
| Mid-1950's | Microphone transducers and speaker transducers of hearing-aid quality are readily available on the market. |



WE 52



United Air Lines HS-33



Roanwell RM-33

At Bell Telephone

The standard headset for the telephone industry and FAA controllers is the Western Electric or "WE" model 52 at top, opposite page.

At United Air Lines

The United Air Lines standard is a hand-held microphone in combination with the HS-33, pictured opposite.

At the Air Force

The standard at the Air Force is an ear-muff approach not markedly unlike the HS-33, and commonly included the Roanwell RM-33 microphone having a pair of voice tubes from mouth to microphone transducer at the jaw, pictured opposite.

At Roanwell

Roanwell is an established manufacturer marketing a wide variety of headsets shown on the next two pages.

Roanwell is serving every conceivable market both large and small, the Armed Forces, air lines, telephone companies and even items for speech laboratories and auditoriums. Accordingly, Roanwell is in a position to know that commercial air lines are but a part of the total market for good headsets. Mr. Trumbull's hearsay speculation of fear of the market being small is irrelevant, since the total market is so large — tens of millions of dollars worth.

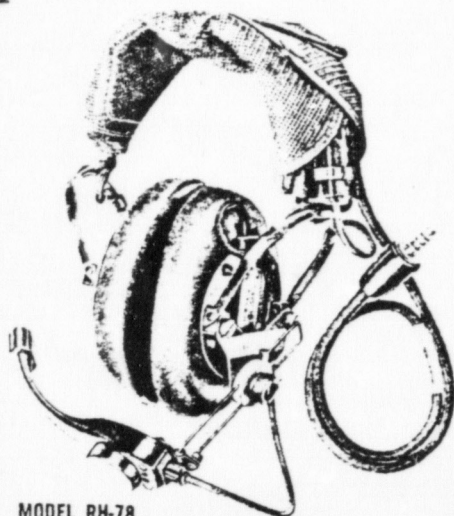
Among Roanwell's products was the RM-33 with mouth tubes to small microphone transducers located at the jaw.

1956

or
Before

All the component parts of both the Larkin and Hutchings inventions, and also hundreds of other components which were not useful in the inventions — i.e., all the parts of many many puzzles — are well known to Roanwell and generally to those of ordinary skill in the art.

1



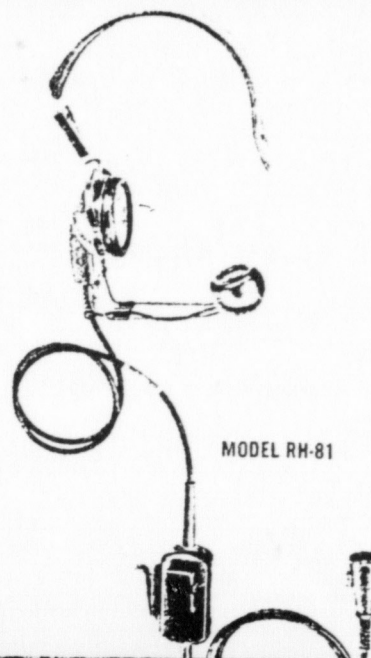
MODEL RH-78

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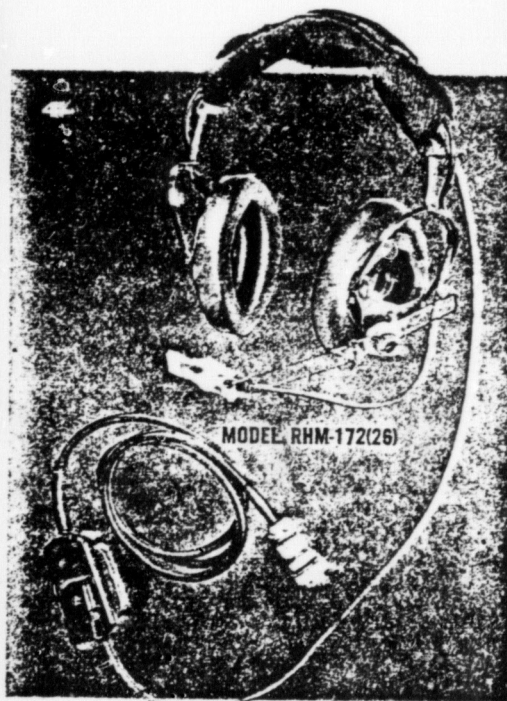


MODEL RH-46

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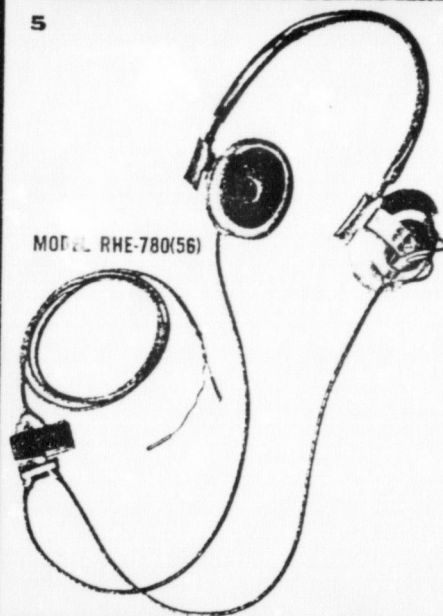


MODEL RH-81

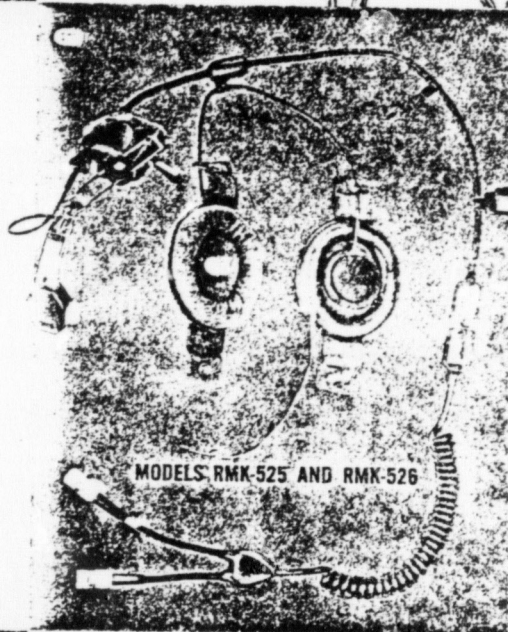


MODEL RHM-172(26)

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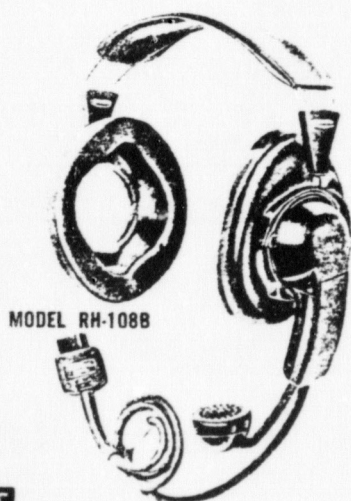


MODEL RHE-780(56)



MODELS RMK-525 AND RMK-526

9



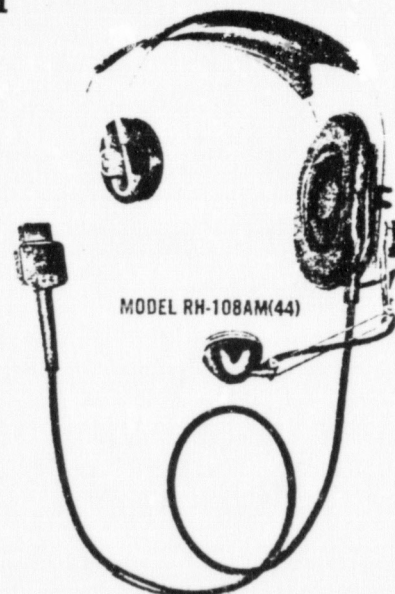
MODEL RH-1088

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MODEL RHE-163(48)

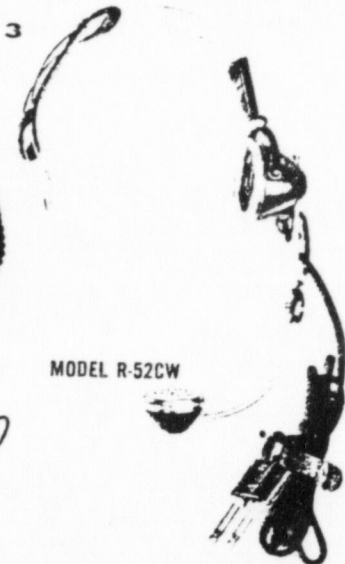
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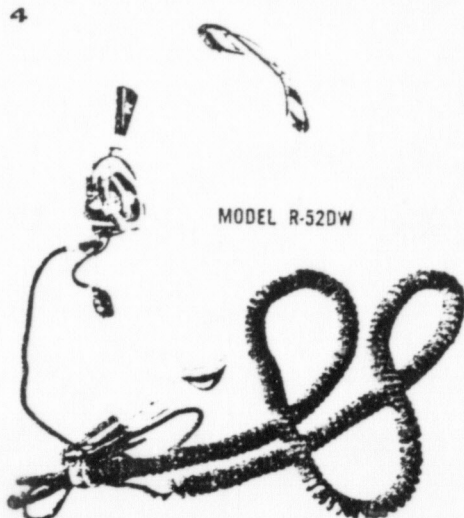
MODEL RH-108AM(44)



MODEL R-52BW



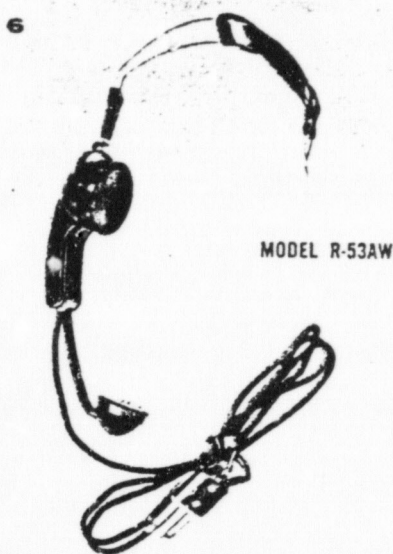
MODEL R-52CW



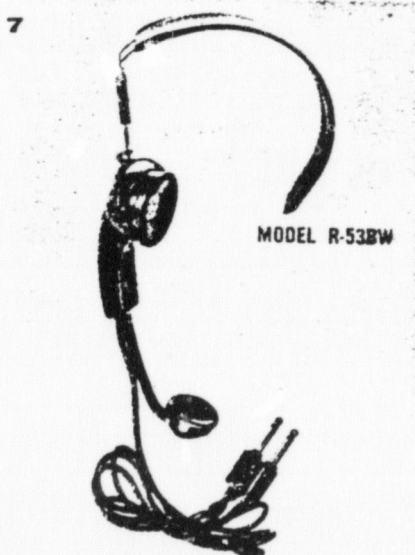
MODEL R-52DW



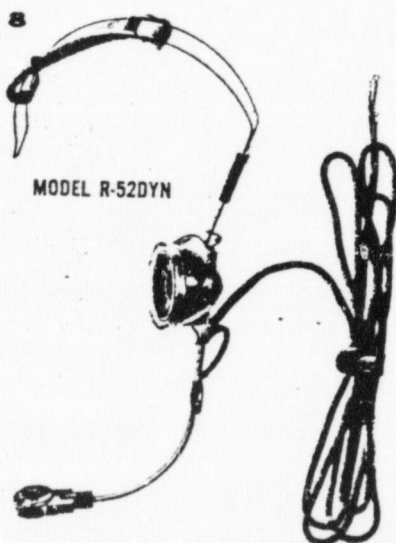
MODEL R-52E



MODEL R-53AW



MODEL R-53BW



MODEL R-52DYN

1/ TELEPHONE OPERATOR'S HEADSET MODEL R-52AW Designed for general operator's use. Weight 9.8 ounces. 5 ft. straight black nylon braided 4 conductor cordset terminated in twin telephone plug. Uses RN-1H high output Carbon Microphone Element (30 ohms) 300-5,000 cps frequency response and a RC-3 Magnetic Receiver Element (275 ohms) 300-3,000 cps frequency response.

2/ TELEPHONE OPERATOR'S HEADSET MODEL R-52BW Supervisor's headset. Equipped with 28 in. cord from headset to cut-out switch then 15 ft. retrax cord to twin plug. All cordage, tinsel, brown cotton braided. Wrist loop at switch facilitates handling cordage while moving about. Weight 11.5 oz. Uses same earphone and microphone elements as the R-52AW.

3/ TELEPHONE OPERATOR'S HEADSET MODEL R-52CW Exactly the same as Model R-52AW except uses Earphone Model RC-4 (650 ohms) Earphone Element.

4/ TELEPHONE OPERATOR'S HEADSET MODEL R-52DW Designed for use by night operators. Brown cotton braided cordset permits freedom of movement — consists of 40 in. straight cord, with wrist loop, attached to 15 ft. retrax cord terminated in twin plug. Uses RN-1H Transmitter Element (30 ohms) and RC-3 Earphone Element (275 ohms).

5/ LINEMAN'S HEADSET MODEL R-52E Operator's type headset modified for use by linemen. Weight 10 oz. Black braided cordset 86 in. long terminated in 2 alligator clips. Furnished with 0.1 mfd 200 volt condenser with one terminal common to receiver circuit so that headset can be used with or without the condenser in series with the receiver circuit. Uses RN-1H Transmitter Element (30 ohms) and RC-3 Receiver Element (275 ohms).

6/ TELEPHONE OPERATOR'S HEADSET-HANDSET MODEL R-53AW A telephone operator's headset designed primarily for Military applications. With headband removed can be used as handset. Has 56 in. straight black nylon braided 4 conductor cordset terminated in twin plug. Uses RN-1H Transmitter Element (30 ohms) and RC-3 Receiver Element (275 ohms).

7/ TELEPHONE OPERATOR'S HEADSET-HANDSET MODEL R-53BW Exactly the same as R-53AW except for headband and 5 ft., 4 conductor, rubber jacketed cordset.

8/ HEADSET-MICROPHONE ASSEMBLY MODEL R-52DYN Especially designed for aircraft control tower application. The dynamic, cardioid, noise-canceling microphone eliminates unwanted pick-up where many operators are talking simultaneously to different in-flight pilots. Microphone impedance 25 ohms. Frequency response 200-5,000 cps. Uses 600 ohms Magnetic Receiver Element with frequency response of 300-4,000 cps. Cordset is approx. 7 ft. long, 4 conductor, black nylon braided jacket, terminated in eye lugs.

Tubes for voice transmission are generally known to generate resonances and to cause attenuation of audio frequency signals. The leading text published the sound transmission curve, opposite, as representative.

Both the Larkin and Hutchings inventions, being very particular, unique combinations of miniature transducers and tubes and mounts therefor, the components of which were not new, no component part of either invention was, as of 1956, in need of any further development.

1956
Air Force

The Air Force evidences that it has long felt the problem of "headaches and sore ears" and "ear torture" among those who must wear headsets for long hours, and a need for a satisfactory speech transmission from headsets.

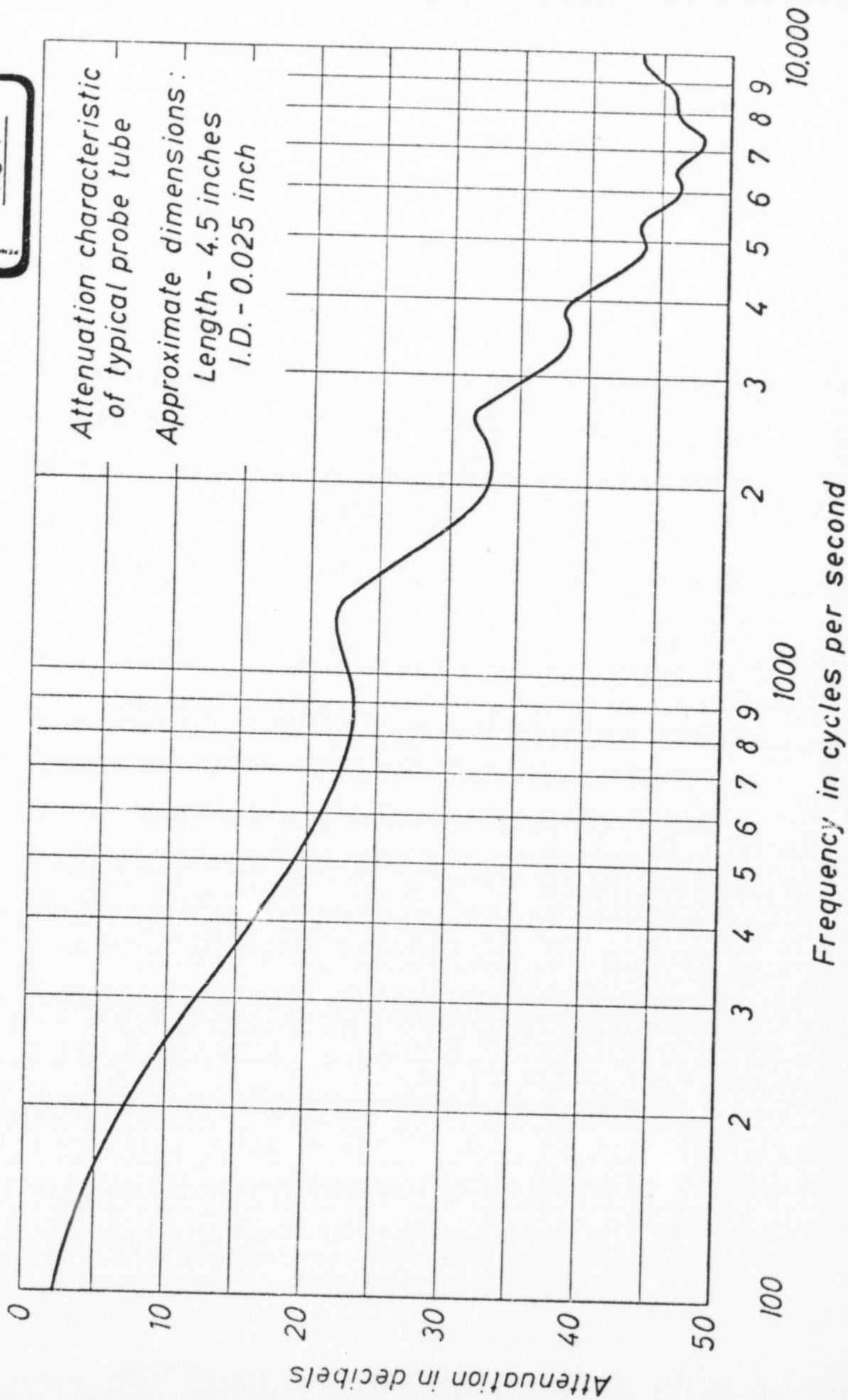
The problem was acute because a missed transmission sometimes meant death, and sore ears caused pilots to move their headsets off their sore ears for relief of pain, resulting in occasionally lost transmissions. Movement of microphones from the mouth likewise caused occasional loss of transmissions.

1956
Ohio State
University

Among the responses to this felt need: The Air Force entered into a research contract with the Ohio State University, where part of the commission was "lightening the weight" of existing headsets. (Ex. App. 139) It cannot realistically be controverted that this research effort was, inter alia, addressing the same problem Larkin and others addressed, namely a good headset which inherently involves good voice and frequency-response characteristics, adequate discrimination against random noise levels, and good wearer comfort.

The Ohio State University Research Group was aware of an experimental model, thereafter abandoned, which employed a chest-mounted microphone and long voice tube, which was never pursued even into a patent application, much less into public use. That experiment led to the Dreher patent filed 1957 and issuing in 1959, pictured ^{on the next page} ⁶³, of which a prototype was made but which never proved practical in the marketplace.

Among its deficiencies: A single two-way transducer that did not work well in conjunction with an amplifier; no versatility from left to right ear when one ear was tired, owing to need to mold the unit to



Beranek FIG. 16-18

each individual ear; similarly, no versatility from regular operator to substitute replacement for the same reason; wearer discomfort. So concerned was Dreher about good pick-up, that his unit is designed for supplemental mouth pick-up through the ear canal which would always be in a fixed position relative to the ear-mounted transducer.

Since the 1956 experimental model and the 1957-~~filed~~ Dreher item (both of which found their way into the dusty scrap-heap of abandoned ideas) nevertheless did include a miniature transducer and a tube of sorts* to mouth and ear, it evidences that those in the art were aware of all the components, the puzzle parts, of the Larkin and Hutchings inventions even when failing to see the value of particular combinations.

**1956-59
Panel
of
Experts**

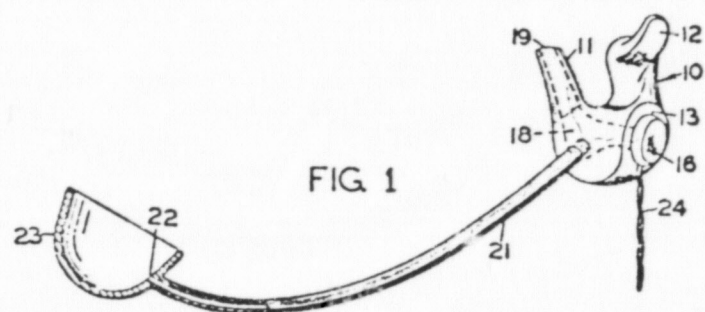
In addition to the above-mentioned research contract with Ohio State University, the Air Force in 1956 convenes its Panel of Experts from all over the country to attempt to solve its pilots' acute "headaches and sore ears" problem that caused occasional grave dangers as well as constant annoyance.

After brainstorm sessions among the Panel of Experts, they listed (Table, Ex. App. 113-14) the many puzzle parts they knew were available and likely for them to work with, including all the component parts of both the Larkin and Hutchings inventions. They were, at the commencement of their work, aware of all the puzzle parts.

This Air Force project went on for three years; finally in 1959 recommendations were made for further research on other arrangements that never solved the problem, enriched the art or served the public enjoyment.

The Panel **did not solve the puzzle** though they were the best experts the Air Force could convene from the entire nation and were aware of the puzzle parts.

*Bell Labs' Romanow took the position that the Dreher ear tube was too short to have any significant acoustic resonances or impedances at audio frequencies, and hence that it did not function as an "acoustic" tube. But Dreher does have a passage of tubular form from transducer to ear, as is plainly seen from any glance at the drawing, even though it is not a flexible tube.



DREHER

**Prc-1961
Martin**

During this period Defendant's expert, Dr. Martin, a member of the Air Force Panel of experts who was also aware of all the component parts of both the Larkin and Hutchings inventions, made over a hundred headsets — without ever happening upon either the Larkin or Hutchings invention.

1957-59

Telex' Erickson hearing-aid patent was filed July 1957, issued April 14, 1959, pictured opposite. (The earliest post-auricle hearing-aid patent was Bell Labs Kelly patent of 1934).

**1960-62
Hearing
aids and
radios**

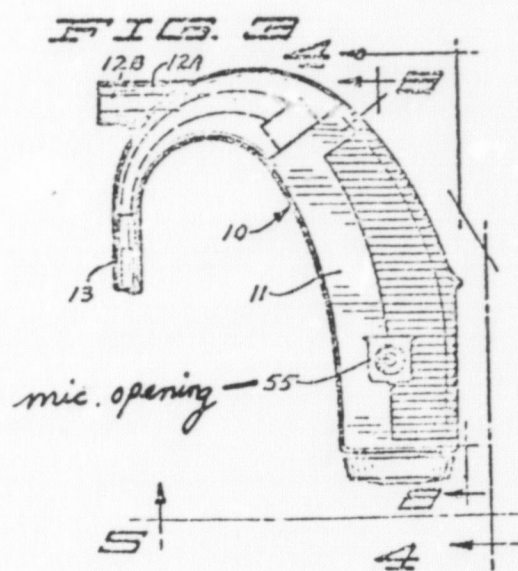
Hearing aids in eye-glass temple members are by now on the market. See Ex. App. 20, attached to the United Air Lines June 1960 "Mentzer memo," showing a man wearing hearing-aid eye glasses. The memo reflected United Air Lines' brainstorming how to make a lightweight headset.

Post-auricle hearing aids with flexible ear tubes, first patented to Bell Labs in 1934, appear on the street, E.g., the Audiotone Model 77 (Ex. App. 872) was marketed in 1960. See also Telex' Erickson 1959 patent above, Beltone's 1960-filed Weiss patent (Ex. App. 388) issuing in 1962; Siemens' 1961-filed Guttner patent with microphone tube over the top (Ex. App. 840) coupled with 1962 Siemens advertisement of its Auriculina model with microphone tube at the top (Ex. App. 844-45).

Thus, almost everybody in the hearing aid industry was in the post-auricle act some way, and those who were paying attention had adequate awareness of over-the-ear pick-up tubes in hearing aids in 1962. Defendant admits it became common knowledge at least by 1965. (Br. 20).

**1960-62
At United
Airlines**

United Air Lines, feeling that headsets were unacceptably poor, reached the level that it did some brainstorming of its own in an effort to find a good, lightweight, comfortable headset.



In June 1960 (Ex. App. 16-19) United's Mr. Mentzer came up with the idea opposite.

Finding no solution in the summer of 1960, United by December 1960 (Ex. App. 24) requested all the headset manufacturers it could find the world over, some 22 in number, to provide United with a lightweight headset which would solve its problems. Inherently that meant user comfort, low weight and adequate voice transmission as a minimum.

United got no satisfaction.

1960-62
At
Roanwell

Roanwell received the United request of late 1960, provided brochures to United on its most likely offerings. United found them not acceptable.

Roanwell, with headset products in every large and small market, was in a unique position to see the size of the carrot, to recognize that the total market for a good lightweight headset could exceed the twenty-million-dollar annual rate which has in fact been enjoyed by Larkin, Hutchings, and infringements thereof.

So Roanwell immediately after the United Air Lines inquiry, i.e., in 1961, set about to design what it called its new "Lightweight," seeking in this unit to avoid "headaches," "high pressure on the head," "fatigue" (App. 371). Roanwell expressed its target:

"The aim was for a lightweight headset that could be used in telephone communication, could be used in television, could be used in the military agencies. * * * it was aimed at virtually every segment of the headset market." (Foley, App. 372).

— That same "every segment" which it never succeeded in serving until Larkin and Hutchings showed them how.

1960-62
At
Plane-Aids

United, not finding satisfaction in 1960, in 1961 asked Mr. Larkin — the free-lance entrepreneur of Japanese radio-sun-glasses — whether he could solve United's problem. United offered no help.

Knowing little of the headset art but being a confident innovator, he undertook to try.

— And he succeeded.

— In 1961-62, exactly contemporaneously with Roanwell's new "Lightweight" project.



EP5649



Roanwell
"Lightweight"



Larkin
MS-50

Roanwell's result (Ex. App. 509) and Larkin's result (Ex. App. 46) are shown opposite to about the same scale.

Roanwell, an established manufacturer with significant market muscle, managed to sell a small number of "Lightweights."

Plantronics was incorporated, and raised capital, to try to make and sell the Larkin headset, but found buyers very resistant to unknown products from unknown companies with no reputation for quality or permanence. Men's lives depended upon the proper functioning of headsets used by FAA controllers, pilots, NASA space missions, etc. Ma Bell had never in its history bought a headset of outside design.

You don't sell to those customers by advertising. If you sell, it is by having your product put through rigorous comparative tests. It takes time to persuade that a test be held, time to set it up, time to get results translated into action.

Money for plant and tools and dies went out; nothing came in.

Bell Labs too was feeling need to improve on headsets in 1962-62.

Contemporaneously with Roanwell's "Lightweight" project and Larkin's MS-50 project, it worked toward what matured into the model Y-1, which was characterized by an acoustic horn for speech pick-up and an ear-cap ear piece.

Neither Larkin nor Hutchings had been obvious to Bell Labs.

The FAA had been searching for a long time. Its air traffic controllers suffered exactly as pilots and telephone operators — and had lives hanging in the balance of good transmission.

In 1962 it conducted "The Oakland Trials," Bell's new Y-1 effort vs. Larkin MS-50.

Roanwell's "Lightweight" doesn't appear to have reached the finals.

Larkin won so dramatically, that Bell never marketed the Y-1.

Ma Bell was not yet convinced, took a long time before it bought its first headset of outside design. Then in dribbles.

But eventually United Air Lines standardized on Larkin; the FAA ordered; Ma Bell bought; NASA which had been searching, bought. More plant investment; more investment in tools and dies and personnel. No profits yet in sight. Just the beginnings of cash flow, still mostly out.

1961-62
At
Bell Labs

1962
At
FAA

\$350,000

What was holding the investors in the action, \$350,000 worth? If a Ma Bell, or a Telex or a Roanwell could copy Larkin, poof, it's all gone.

1962-63
At
Plantronics
and
Audiotone

Plantronics did not consider Larkin the end-all of headsets. Audiotone had its post-auricle model 77 on the market for a couple of years now. Plantronics sought help from Audiotone and together they set out to improve on Larkin — make a post-auricle headset.

They developed the MS-43 post auricle headset with mouth tube under the ear and no adjustments or hooks top or bottom, pictured opposite.

The alternatives for tube positions were few. They discussed both over and under the ear approaches for the mouth tube. Audiotone's Johnson wrote in March 1962,

"After discussions with Court and Keith I am of the opinion that the best way to design the behind-the-ear job is to bring the [mouth] tube out of the bottom instead of over the top. If you will study facial structures I am sure you will agree that this is about the shortest route and simplifies the problem of separating input and output. * * *" (Ex. App. 385).

That document is not a hindsight litigation document, but a contemporaneous technologist's expression by "men who were there."

That document speaks for itself, and we cannot find in it any inconsistency with the thought: At least three people considered over-the-ear, failed to see its value, and went under the ear with the MS-43 headset.

The MS-43 was subjected to switchboard service evaluation for some few years. Plantronics' technical evaluation of it:

"* * * the method of mounting to the user proved to be less than adequate. Swift lateral motions on the part of the user produced inertial drag and sway on the part of the headset which tended to move the acoustical tube out of position with the result that transmission tended to be 'spotty' " (Ex. App. 273-4)

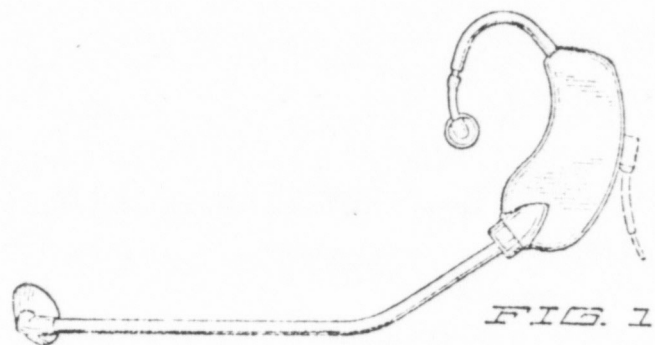
— Another contemporaneous technical evaluation by the men who were there, trying to make the Hutchings invention, **after all the best prior art to Hutchings is in existence.**



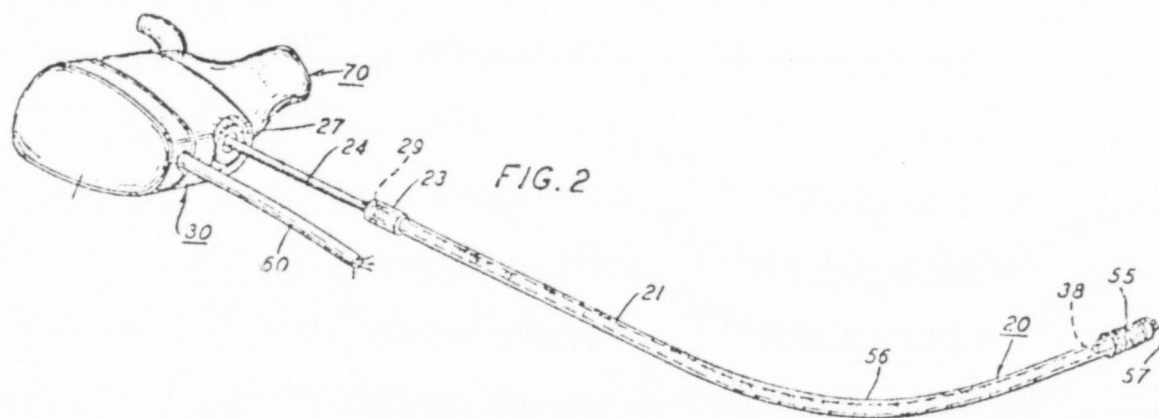
MS43 POST AURICLE TYPE HEADSET
USED IN SWITCHBOARD SERVICE
EVALUATION

Exhibit 66

Plate No. 9



Flygstad



Bell Model 61

Not only are all the puzzle parts all known for about seven years, but the closest prior-art assembly of them that ever existed has now been tried.

The men who decided to go mouth-under-the-ear did not see how to cure the problem by adding adjustments at the top and hooks at the bottom or by reversing tubes.

They had chased the carrot, but missed it.

This first effort to follow the teaching of Larkin in combination with post-auricle hearing aids, went the wrong way, failed, no enrichment of the art, no public enjoyment of any post-auricle headset.

1962-63

At
Telex

Telex was trying.

We have no figures on Telex' loss of sales on its "TwinSet" which had been its pre-1961 entry into the lightweight race, to Larkin. But we know Telex was trying.

In 1963 it filed application for patent on its Flygstad post-auricle headset, pictured opposite.

You don't design and patent, if you are not interested. And Telex too can be presumed to have seen enough of the market to know the size of the carrot, at least roughly.

But there is nothing to suggest that the Telex Flygstad set would be different from the abandoned MS-43 in terms of stability of the pick-up upon head movements.

And Telex never marketed Flygstad, in spite of spending the money to develop it to the patenting stage.

1963-68

At
Bell
Labs

Bell's Y-1 had been killed by Larkin.

Every Larkin MS-50 sales had potentially been a sale for a Bell model 52 or Y-1 or some other Bell headset.

By 1963 post-auricle hearing aids with mouth tubes in every position had been advertised repetitively in the U.S., and were admittedly common knowledge by 1965.

Bell in 1963 set about the project that matured into its model 61 pictured opposite — a headset which by Agreed Fact (App. 118) was

"expected * * * to become standard equipment for operators throughout the Bell System * * * "(App. 118).

Bell could have gone over the ear or under the ear, but was original enough to go *into* the ear. Their application for the Bryant patent on the model 61 was filed in 1965.

It took Bell from 1963 to 1968 to complete its design and testing and get a contract (with Roanwell) for production.

Late
1968
At
Plantronics

Plantronics, like Roanwell, feared competition from Bell's new 61 with Bell's mark *ie* behind it. And Plantronics did not have a second product to fall back upon — it was a one product company.

Plantronics bid for the contract to make the model 61 for Bell.

Plantronics lost that bid to Roanwell.

Plantronics immediately commissioned a "task force" including Hutchings, to out-do anything Bell could do, model 61 or no.

Jan.-Feb.
1969
At
Plantronics

Hutchings invents what was first called the MS-50-80, later the StarSet.

Spring
1969

Plantronics' report to stockholders for the fiscal quarter ending February 1969, announces new "second generation headset".

June 6,
1969

Roanwell's Potter, alarmed, "must find out what it is — soon" (Ex. App. 552)

Potter marshalled a number of Roanwell's personnel in a well-coordinated program of intelligence-gathering which involved interviewing Plantronics' suppliers and even one of its engineers, the latter on the pretext of exploring his availability for employment, and arranging for third parties posing as potential customers to make inquiries to Plantronics. (Opinion, App. 1108, not challenged or controverted)

Early
Summer
1969
Roanwell

Roanwell began to work on its crash "MOH" (Miniature Operator Headset) project. (Foley, App. 384).

June 30 is designated by Potter as the "target" date for the spying on Plantronics to learn about its "second generation" headset.

Roanwell's espionage (the right word?) against Plantronics turns up the brochure (Ex. 140, p. 100) reproduced at page 60 of Plantronics' original brief, containing 13 different pictures of the MS-50-80, StarSet.

That brochure was circulated to all relevant Roanwell personnel.

Defendant's Potter circulated his memo containing his analysis of the Plantronics-Hutchings MS-50-80 StarSet, to all relevant Roanwell engineering and design personnel — notably without evidence of any appreciation that it matters whether either tube goes over or under the ear.

July 24,
1969
Roanwell

Before
vacation
the last
week of
July 1969
(i.e., July
28, 1969)
Roanwell

"Somewhere around the summertime of 1969 [recalls Roanwell's Mr. Foley six years later, App. 385] sketches were being made [by un-named persons at Roanwell] of various configurations with the speech tube under the ear and on top of the ear."

Q. When?

A. "It was just prior to us going on vacation which is in general the last week in July and the first of August," i.e., Monday July 28, 1969. (Foley, App. 394).

At other places Mr. Foley testified that he and Roanwell took vacations the last week in July (which began Monday, July 28) and the first one or two weeks of August (App. 403); told of his belief that the alleged sketches were made before he personally saw the July 24 Potter memo (App. 402 and 395); recited that he did not know whether others at Roanwell already knew about the Plantronics headset. (App. 395).

Since Defendant's brief puts so much weight on these missing sketches as proof of independent inventorship, we must take time to assess them.

First, there is nothing to corroborate this vague recollection extending back over six years of time. Defendant having the burden of proof under 35 U.S.C. § 283, the law is well established that evidence of

independent prior inventorship must be corroborated. *Coffin v. Ogden*, 85 U.S. (18 Wall.) 821, 823 (1874).

Second, there is absolutely no suggestion whether the absent sketches Foley thinks he recalls, had both tubes over the ear in accord with the Oticon hearing aid which was marketed theretofore and was known to both Hutchings and Mol before Mol's and Unex Lab's work. That both-tubes-over-the-ear structure suffer from lack of the added stability obtained by the ear tube's being plugged into the ear from the bottom of the capsule — and this structure, though designed, has never been marketed by anybody. If the missing sketches were of that approach, they totally miss the mark.

Third, a number of others, ranging from a British Ministry of Aviation report-writer to Graham, Larkin, Johnson and Lagman who actually built units, had considered and been aware of mouth-tube-over-the-ear but preferred a shorter mouth-tube-route, for what they thought were sound technological reasons. (Ex. App. 385) No doubt Telex-Flygstad as well. But having considered it, they abandoned it, owing to nonobviousness that the value of going that way was greater than the detriment of the longer mouth tube.

So too, the Roanwell sketches, if any were made with voice tube over the ear before seeing the MS-50-80 disclosure (which is doubted), were destroyed and abandoned owing to lack of appreciation that over-the-ear had value. When, some three months later, Roanwell commenced the over-the-ear effort that resulted in the R-70, it was a new original effort, not a picking up of the "summertime" effort. (See Unex Labs correspondence, Ex. App. 303-305, and particularly 308 and accompanying sketches.)

So if any sketches were made, they were destroyed without follow-up; the potential value of the idea was not appreciated or obvious; the idea was wholly abandoned until resurrected in response to the StarSet. The total context of those sketches is that they evidence nonobviousness of the value of over-the-ear. Roanwell's heavy reliance upon them is an argument for Plaintiff.



**ROANWELL
CORPORATION**

MODEL R-70A LIGHTWEIGHT TELEPHONE OPERATORS' HEADSET

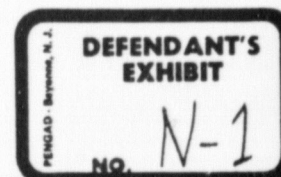
**Transducers Meet Telephone Industry Standards of Quality
Behind-the-Ear Design Offers Comfort and Lightness**

Model R-70A behind-the-ear telephone operators' headset, designed and manufactured by Roanwell, has wide applications including PBX and other console operations.

The transducers employed in the R-70A are characterized by high resistance to shock, low distortion and lightweight. The adherence of the R-70A transducers to telephone quality standards distinguishes this model from competitive headsets of a similar design.

The R-70A is supplied with five flexible ear inserts of varying sizes. The selection of ear inserts is intended to provide each operator with as comfortable a fit as possible.

Several electronic amplifier options are available, each housed in the R-70A plug assembly. Features include elimination of background noise and gain compensation over a wide range of operating voltage and input signal conditions.



About
July 31,
1969
Roanwell

Roanwell's Mol, chief designer, and Morrison (who Mol represents as second to none in headset design knowledge) go to hearing aid store during company vacation to buy "as many hearing aid cases as we could get a hold of in order to see what properties, what shapes these hearing aid cases had." (Mol, App. 502).

However, "some years ago in California" Mol had seen a hearing aid "where you have a microphone tube coming over the top and the receiver tube under the bottom of the hearing aid" as in the reference at Ex. App. 859. (Mol App. 1046).

In a moment we shall see that neither this knowledge, nor his knowledge of all the available hearing aid cases he could buy, led Mol to the over-the-ear approach.

By August
31, 1969
Roanwell

Defendant had a wooden model of the over-the-ear headset made from a StarSet ad by the end of August 1969. (Foley, App. 398-99) "If the marketing people wanted to try it on, to check it for balance or whatever, they could have done so long before the USITA show and before Defendant even engaged the services of Unex. (Tr. 758)." (quoted from **Defendant's** post-trial brief, p. 75.) This model was shown to Mol before the end of August. (Mol, App. 943-945)

Such a model, painted, looks like the real thing. Roanwell took a picture of a lady wearing this wood copy of the MS-50-80, reproduced this picture in brochures (sample opposite) and posters, calling it the new Roanwell R-70, for display at the upcoming USITA trade show.

It is hard to visualize an act of greater desperation to get something you did not know how to get before.

More important: The trial court **erroneously** found that Roanwell "did not discover such details [of the Plantronics unit] as the over-ear voice tube. Nevertheless, when Roanwell engaged the assistance of Unex Labs in the development of what one of its people candidly termed a 'me-too' version, Unex's exploratory sketches included one model having an over-ear voice tube and an under-ear ear tube. It was not until several days later, at the [USITA] industry show, that the Plantronics StarSet was first publicly disclosed and Roanwell learned the full details of its construction." (Opinion, App. 1109)

Though the advertisement Roanwell copied called the unit by the name "MS-50-80", Roanwell not only had the full details but had made a model, photographed it, and was displaying the full details at the same show the trial court found to have been the first place Roanwell learned about it! Only the name was changed from MS-50-80, not the structure, when it became the "StarSet" to which the court's opinion refers.

Sept. 4,
1969
Roanwell

Roanwell, though still without more than a wooden model copied from the Plantronics MS-50-80 (StarSet) "told the Bell System that we intend to introduce the 70 Series headset" (Ex. App. 549)

Prior to
Sept. 26,
after Aug. 19
Roanwell

Roanwell's first drawings of record in the case, undated other than between events of August 19 and September 26. Pick-up tubes are *under* the ear as in the MS-43 and Telex Flygstad prior efforts, not over the ear as allegedly sketched in missing "summer-time" sketches.

Here recall that chief designer Mol was admittedly aware of prior hearing aids that had pick-up tube over the ear and ear tube under the ear. But his design group did not go that way — assuredly only because they saw no advantage in going that way and did see advantage in going pick-up tube under the ear. This was not hindsight argument of litigants or counsel as to what should have been obvious, or as the trial court phrased it, "presumably" obvious. This was real-world action of men who were there.

Why was the hearing aid's alleged "lead" not followed? Because hearing aids have no feature of locating the microphone near the mouth of the wearer; it is the voices of other people that are of interest; They have no need for microphone stability near the wearer's mouth; do not address the problem; teach nothing about either the existence or solution of the problem.

So even knowing about hearing-aid over-the-ear pick-up tubes, as did Mol along with the Graham, Larkin, Johnson, etc., did not suggest to **any** of the men who were there, a head-set in that direction.

Sept. 26
1969
Unex

Roanwell, hurting to get what its own staff of headset designers had not produced, though its "MOH" Miniature Operator's Headset project was now months old, consummates arrangement with Unex Laboratories, an old-line established hearing aid company, to help with Roanwell's project for a post-auricle miniature operators headset.

Roanwell's most-knowlegeable-in-the-country designer Morrison was "sent into convulsion" by the idea of a "hearing aid type of headset".

Query: Does that make "the invention as a whole" obvious to him? Absent Plantronics, would he have ever brought the invention to public enjoyment?

"All of the ideas Roanwell had, all of the information that Roanwell had * * * were disclosed to and discussed with the Unex people * * * [about September 26]" (App.516)

October
3rd, 1969
Unex

Unex Labs, a company selected for its experience in post-auricle hearing aids, reports its first design efforts (Ex.App.586-593), including capsule locations and commentary at 587.

"Pro and "con" values of "low slung" capsule are recited: To Unex, the "shorter input to..." is recited as "pro".

No offsetting value is shown for over-the-ear. Even though Unex was informed that the MS-50-80 and Roanwell wood model copy of it had the pick-up tube over the ear, Unex does not dignify the idea with a preliminary sketch among its pages of some 20 sketches of various things.

October
6-21, 1961
Unex

As reflected in Unex's report for the period October 6-21 (Ex.App. 594), this was the period in which the Roanwell sales department demanded what elsewhere they referred to as a "me-too".

So Unex prepares a further series of 14 sketches (Ex.595-607) of tube-capsule-arrangement ideas including its first rough sketches of mouth-tube-over, ear-tube-under, alternative. There were four of these mouth-tube-over sketches among the 14. They carried with them a series of adverse comments:

At App. 598:
"no swivel advantage"

"more awkward output mtg."
 "more glasses interference"

At Ex.App.599:

"no chance for swivel
 adjustment input tube."
 "problem — eyeglasses"
 "Bulky for small tight
 women's ears"
 mouth tube "adjustable for
 length only"

Among the simultaneous commendations of the various under-the-ear versions, e.g., at Ex. App.598:

"good security"
 "easy mtg [mounting]"
 "good input position and adjustment"

The Unex favorite is sketch A, mouth-tube-under and **very low slung capsule** in the sketch labeled "Good Security" (Ex. App. 598), but in the real life of capsules on the human ear, that Sketch-A arrangement produces a most unstable pick-up tube, enough so that nobody ever built such a very low-slung unit.

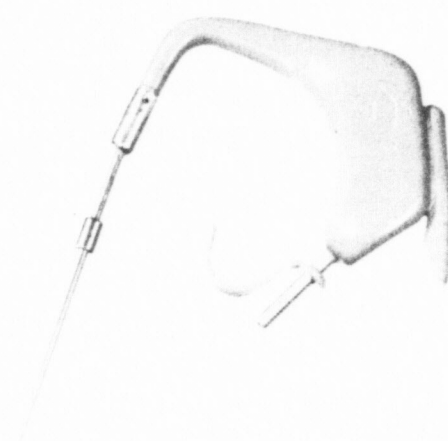
Not having themselves worn the units, Unex people still were not believers. They favored under-the-ear.

If there is anything that the series of sketches and the notations there (Ex.App.586-607) reveals clearly, it is that Unex did not find it "obvious" what to do. Said the October 21 report:

"It is expected at a meeting on Wednesday October 22 [the day after closing of the USITA show of the StarSet and Roanwell's show of photographs of its wooden copy of the MS-50-80 StarSet], we can zero in on the best design consideration. * * *."

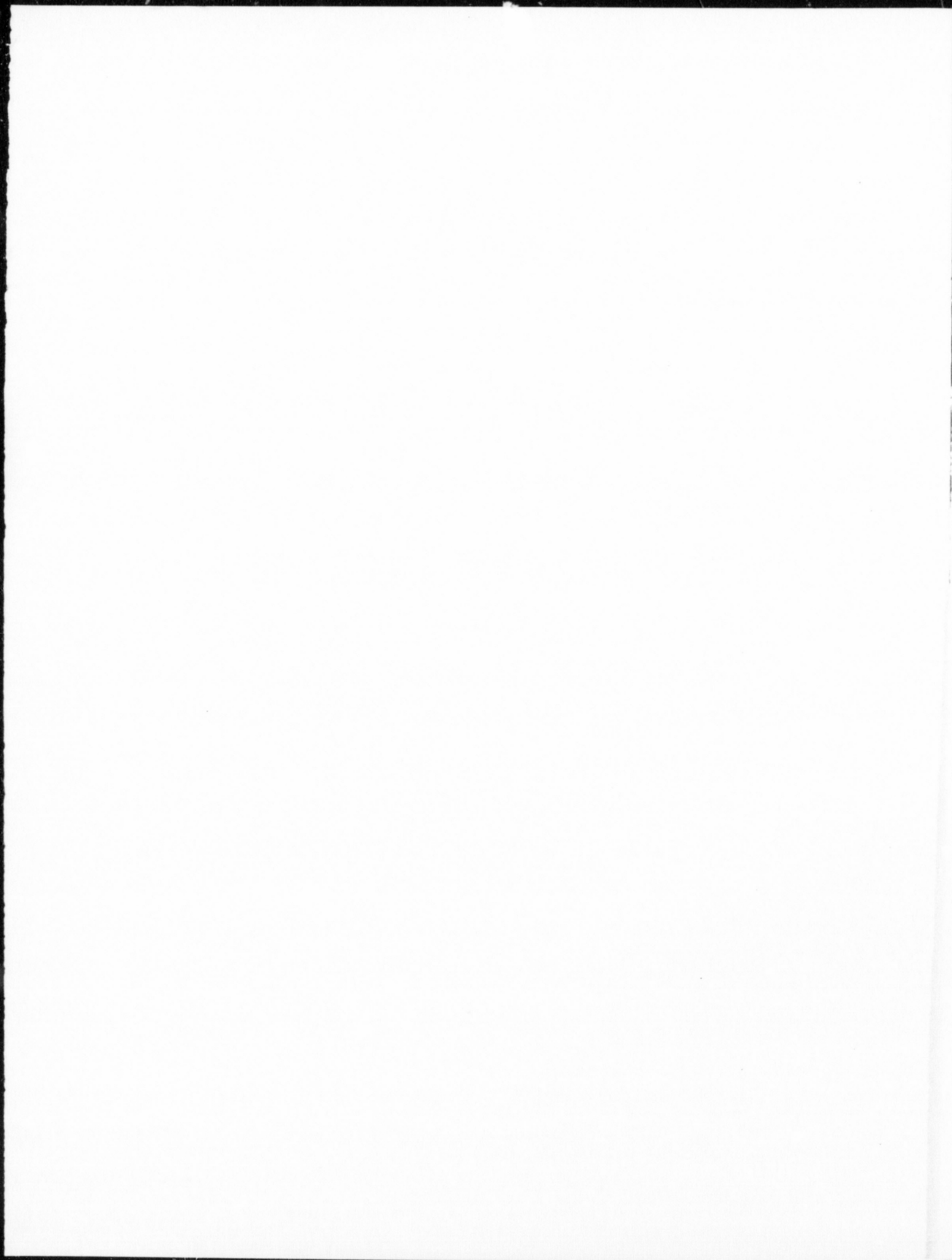
— Had to wait until the MS-50-80 had been actually seen, put on, worn, taken off, examined, before they could arrive at the best considerations. And:

"A survey of operator reactions to the various models should probably be done **before too much detail drawing is attempted.**"



Bell submission specimen

R-70



Of course you would not want to waste time *drawing* things which it is not obvious will work on real people's ears.

October
19-21,
1969
USITA

The USITA show commences October 19, where Plantronics is showing the MS-50-80 StarSet and Roanwell has its posters and brochures showing the wooden model — which when painted and photographed looks real — of the MS-50-80, and calling it an R-70.

Roanwell marketing people, for the first time, try on, don, and wear a real StarSet rather than wood-weight.

October
30, 1969

Roanwell meets with Unex as reported in Unex report, Ex. App. 608, on October 22 and again October 30. Said the report:

"it was decided to narrow the models down to one model to be similar to the P.P.I. [Plantronics] design with over-the-ear input pipe, but with Roanwell transducers, and the other model to be the most acceptable flat type behind-the-ear unit with over-the-ear output. We also decided to add a plug-in cord, as featured by P.P.I. [Plantronics]."

December
6, 1969
Unex

"This period [just prior to December 6] was devoted to designing and building a second working model of the Series 70 headset with an over the ear input similar to the P.P.I. [Plantronics] configuration." (Unex report, Ex. App. 616).

December
6, 1969
Roanwell

The first (or possibly second) working specimen of the "me-too" R-70, pictured opposite, is shipped to Bell for evaluation (Ex. App. 627).

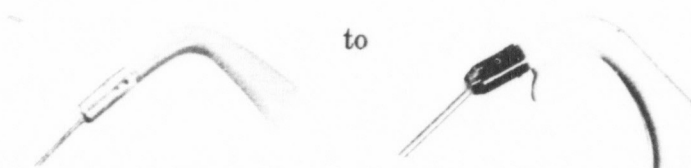
It is necessary here to compare the Bell submission specimen (Ex. App. 627) and its immediate successor, the present model R-70, pictured opposite.

Note particularly about the Bell submission specimen:

- (a) thin over-the-ear portion and ferrule for swivel mount of the voice tube.
- (b) absence of any downward protruding hook for the top of the ear.
- (c) bottom-ear hook.
- (d) relatively smooth rounded style of ornamentation.
- (e) small round cord plug.

As to (a), the swivel, Mr. Mol admitted (R389) "that on the over-the-ear approach there was a difficulty or some problem in how you could make the mouth tube swivel." And he testified that Roanwell, soon after the Bell submission, made detailed studies and drawings of the Plantronics MS 50-80 swivel, and copied the ferrule dimensions down to the thousandths of an inch (Ex. App. 560, 567-70).

As to (b), the top ear hook: Roanwell made layouts of the MS-50-80 top ear hook and ear conformity curve and matched their own capsule to it, changing



— a change both in function and in aesthetics.

Roanwell at this late stage found for the first time, the theretofore nonobvious point that:

"Small fixed hook over the ear *needed for stability* when under the ear hook is not used, *and for locating mike-boom*. (*Location critical* on small female ears)" (Ex. App. 564, emphasis added.)

— An admittedly "**critical**" detail, NOT included in the Bell submission specimen, then specifically and directly copied from the patented structure.

As to (c), the bottom ear hook: Roanwell still supplies it in a separate sack with their units as sold, but admits that it commonly is not used (Mol, App. 929-930) — even recommends non-use by certain males (Ex. App. 564). Its role is relegated to the special odd-ball ear shape. (Mol, App. 929)

As to (d), the relatively smooth, rounded style, and (e) the small round cord plug: Roanwell changed to a more planar style and a large bustle-back cord plug. See pictures opposite p. 56.

ALL these changes from the first Bell submission specimen (Ex. 144a) to the R-70 were in the direction of movement closer to the Plantronics MS 50-80.

And most of them are admitted to be direct copy-copies from Roanwell drawings of an actual MS 50-80 unit.

It takes a certain gall for Roanwell to deny copying and imitating the MS 50-80 in the face of that evidence.

Interestingly, however, for an ear-mounted set to work, it is absolutely necessary that there be a clothes clip for the cord, thereby to take much of the cord load off the ear.

And as to Plantronics' clothes clip sold with its MS 50-80, Roanwell admits it copied that structure "*as close as we were able to*" (App. 532). [The patent on that unique clip was originally in this suit as filed, but that issue has been settled.]

***Defendant's hindsight speculation
contradicts the Real World***

There being only three positions for a mouth tube in an ear-mounted headset, and others having tried to make ear-mounted headsets, it would of course be ridiculous for Hutchings to claim to be the first to have speculated on putting a mouth tube over the ear.

Rather his claim is that it is more important than others ever realized, that he is the first to have made such a headset, to have found out its value, and to have enriched the art and given enjoyment to the real-life people in the world an enjoyment of any ear-mounted headset.

Obviousness is Defendant's burden of proof.

Except for those who copied Hutchings, Defendant has offered not one shred of evidence of any man who was working in the real world of headsets and who followed the lead of his awareness that *the* one of only three places for a mouth-tube in such a set, was over the top of the ear. All others went *into* the ear as Dreher and Bell model 61, or *under* the ear as MS-43 or Telex; and failed.

We must put those stories not only in the time context as done in the Chronology, but also in other contexts, if the significance is to be appreciated.

Recall first that the market to be had with a successful ear-mounted headset is substantially in excess of 215,000 units annually, i.e. millions of dollars. That is a big enough carrot to interest any rabbit who could see it. And while one airline employee like Mr. Trumbull might not see it, the Air Force, FAA, Roanwell, Telex, Bell System — these all could see it.

With that carrot in mind, reconsider just a *few* of those who the record proves to have been aware of over-the-ear, but who went in another direction, failed to afford any public benefit in that direction, and **having their failure before them failed as well to correct the "minor detail" which would have turned failure into success.**

- (1) Dreher, 1957, had all the components at hand, all the puzzle parts. He assembled them with mouth tube, transducer, a sort

of ear tube. We don't know for sure whether he thought of going over the ear instead of into the ear, but with only over, in and under as choices, it seems a likely guess. Anyway, he failed.

- (2) United's Mentzer had in hand (Ex.App. 20) an eyeglass hearing aid with ear tube to ear transducer, with pick-up or microphone transducer opening through a very short "tube" or port at the top-front of the ear, and the thing was mounted upon the ear (as well as the nose). He had a working assembly of all the puzzle parts, but could not re-arrange them for his purpose.
- (3) Defendant's expert witness, Dr. Martin, admittedly had all the puzzle parts in hand — they are listed on the 1956 chart of the Panel of Experts of which he was a member. He made over a hundred headsets, but with all the parts in hand, Hutchings escaped him.
- (4) Roanwell in 1960, when United Air Lines asked for help, in 1961 commenced its "Lightweight" project. Dreher was old by now; post-auricle and eyeglass templar member hearing aids, common knowledge by now. Roanwell didn't even attempt an ear mount as Dreher had. They must have been too intimidated by fear that an ear was not strong enough to hold a headset.
- (5) Graham and (6) Larkin.

Larkin at first went a different way, mounted his capsule on headband or eyeglass frame, filled a great need. But he tried thereafter to go post-auricle with Court Graham on the MS-43 that failed for a contemporaneously recorded technical reason: instability of the mouth tube pick-up. (Ex.App. 273-74)

After the MS-43 failure — its tests went on for "a few years", likely less than three — they had before them what Roanwell declares to be the best prior art, not only the puzzle parts but all assembled nearly like Hutchings. Where did it lead them, this having the best prior art in front of them together with an awareness of the over-the-ear alternative? They simply couldn't see it. Though they could see the carrot, they failed to enrich the art or afford public enjoyment of any form of ear-mounted headset.

- (7) and (8) J. R. Johnson and Joseph Lagman of Audiotone, the parties to the March 15, 1962 memo. The memo records that they saw the carrot: "I am convinced that their [Court's and Keith's] development [of the MS-43] has excellent long range marketing potential * * *." (Ex.App.384).

They had, said the memo, discussed over-the-ear, but they favored under-the-ear for technical reasons expressed, such as shorter mouth tube [thereby to suffer less resonances and less attenuation and perhaps long-arm leverage which would seem to multiply any capsule instability.]

Result: Audiotone either led or followed Plantronics under-the-ear; they all missed the carrot they had recorded they saw. No enrichment of the art; no public enjoyment rendered.

Contrary to the trial court's "presume" that a headset designer would follow the lead of any hearing case he started from, these four people considered both approaches and for technological reasons other than hearing-aid case shape, reasons felt by these real life men who were there, and rejected over-the-ear in favor of failure.

The extra length of the mouth tube we now know to be of relatively minor consequence. So easy it seems, to have gone Hutchings' way. Now that Hutchings has shown us.

- (9) British Ministry of Aviation, in reporting on 1962 field trials of the Larkin headset suggests "The possibility of making a self-supporting capsule and microphone tube to hook over the ear is worthy of consideration." (Ex.App.121). But the next British structure did not enrich the art, did not produce public enjoyment. Just speculation of an interesting "possibility".
- (10) Telex' Flygstad (Ex.App.277). We don't know of record whether or not he was aware of the over-the-ear as an alternative, but Defendant has often argued that the choices are so few that no man could avoid being so aware. And assuredly Telex was actively in the market, seeking the carrot.
- Not only did Telex fail; but when their own under-the-ear reference (agreed by the parties to be the closest prior art) was in front of Telex, they did not think, could not find it obvious, to do so simple a thing as reverse the tubes and enjoy his carrot.
- (11) Bell Labs, R & D arm of the world's largest manufacturer and user of headsets, clearly saw the carrot. They had tried the Y-1 that failed in 1962. They tried again.

They considered post-auricle, made a preliminary lucite model, but to their expert research men

“the outlook for stability was so poor in our [Bell’s] estimation that we just abandoned it.” (Bell’s Romanow, App. 301)

So badly did Bell react to the problems of stability as they saw them, they went on with their model 61 program to put the mouth tube to a capsule in the ear instead of over or under. — A clear, positive, unequivocal, dramatic sacrifice of versatility and convenience in pursuit of greater stability than they could ever foresee in any post-auricle headset, over or under the ear.

Inventors of the transistor, the laser, and the model 52 which has quite likely sold more headsets than any other in history, were unable to hack it with ear-mounted headsets.

- (12) Mol had long known of hearing aids with mouth-tube-over-ear-tube-under. Yet, he did not as the trial court “presumed” he would have, proceed over-the-ear. Roanwell engineers prepared lay-out drawings (Ex. App. 306-7) the earliest of record, before Sept. 26 but after July 24, 1969. July 24 was the day of circulation to Roanwell personnel of the Plantronics brochure so fully disclosing the StarSet that they could make a wooden model, and advertise it for real. They by now saw the carrot in technicolor, were aware of over-the-ear, but, not appreciating its value, went under the ear.

Nothing they drew ever was made or enriched the art: they had to copy StarSet’s over the ear on one model and had to add hook adjustments top and bottom before they could make an under-the-ear model marketable.

- (13) Unex Labs’ personnel. Saw the carrot in technicolor. Were supplied with all information Roanwell had as of September 26, which included the StarSet. Made sketches October 14 of versions both with mouth tube both over and under; commented in favor of under the ear — which they could not make work in the form they sketched, not until adjustments were added top and bottom.

In all these efforts by so many, including many mentions of over the ear, there is not one word of appreciation of *value* in over-the-ear.

So very, very close were they, to have completely missed the opportunity to enrich the art, to serve the public enjoyment in a post-auricle headset of any kind.

. . .

If the standard of patentability is that it be not simple, Plantronics loses.

If in order to be patentable, it must seem complex, even after a Defendant's counsel has simplified it all with hindsight-clear reconstructions, **all patentees lose**. Worse, R & D budgets must then return no profits, must hence be reduced; the public then loses the advancement of the arts the system was enacted to sponsor.

But if the Defendant's burden is to prove "obviousness to the men of ordinary skill in the art, at the time the invention was made," the conclusion dictated *by the record* is clear beyond a reasonable doubt.

"A patent on a complete and successful invention cannot be invalidated by proof of any number of prior incomplete and imperfect experiments, even though the experimenters may have had the idea of the invention and may have made partially successful efforts to embody it in a practical form." *Walker on Patents*, § 68 (2nd Ed. 1964)

"Prior casual and abandoned uses are held insufficient to invalidate a later patent . . ." *Id.*, § 69.

"Novelty of a machine or manufacture is not negated by any prior unpublished drawings, no matter how completely they may exhibit the patented invention." *Id.*, § 70.

Surely it is not necessary further to develop citation to law, that prior conceivers who abandon their conceptions, who do not enrich the art, who afford no public enjoyment, are nullities in the patent scheme of things. Rather

"* * * courts have not been reluctant to sustain a patent to the man who has taken the final step that turned a failure into a success. **In the law of patents, it is the last step that wins.**" *Washburn & Moen Mfg. Co. v. Beat 'Em All Barbed Wire Co.*, 143 U.S. 275, 279 (1892), emphasis added.

The law *must* be such if there is to be a *system* of practical, real-life inducement of capital into R & D as the Constitution contemplates.

Essentially all inventions, including even the most dramatic inventions of history, the electric light and telephone, were such "last-step" inventions. See Dodds and Crotty, *The New Doctrinal Trend*, 30 J.P.O.S. 83 (1948), reprinted in the white-covered addendum to Plantronics first brief.

But the system that provided the capital to keep Edison and Bell (and Carlson of xerography and Land of Polaroid) working, was the confidence that if they found the last step they would get an enforceable patent, enrich the art, and win a profit in direct proportion to their invention's actual service to actual public enjoyment.

***Mouth-tube-over-the-ear
is importantly better than
mouth-tube-under-the ear***

"The invention all admir'd;
And each how he
To be the inventor miss'd
So easy it seem'd
Once found,
which yet unfound
most would have thought
impossible.

Milton, *Paradise Lost*

It is, we think, not subject to genuine contest: Absent a complex of hooks and adjustments, greater stability of the tube at the mouth is obtained mouth-tube-over-the-ear on most human heads.

That Roanwell holds this view is evidenced in part by the vital importance Roanwell gave to the "me-too" headset.

But how does over-the-ear work to give that greater stability? How much greater is obtained? Why is it so?

Hutchings himself at the time and Hutchings' patent soliciting attorney, appear not to have known the why in 1969.

When what is now known is explained, it becomes self-evident. It then becomes inherently part of a subjective judgment bias for obviousness, though to this stage in all the briefs the point is still somewhat vague and obscure.

A post-auricle *hearing aid* has no need to place the microphone or pick-up tube in any stable position. It is designed to pick up voice not from the wearer, but from another person. A hearing aid does not have the problem; it does not suggest that the problem will exist in headsets; it suggests no solution to the problem, whether its tubes are over or under the ear. On this point, a hearing aid is irrelevant.

Worse, it is misleading: *All who followed a hearing-aid lead, failed until they broke with that lead.* That includes Hutchings' break from two tubes over the ear; Roanwell's break from the likes of MS-43 and Flygstad in each of two directions, over-the-ear in the R-70 model and multiple adjustable parts for its under-the-ear R-71 model.

To an important degree, mouth-tube stability is a function of highly variable head-and-ear shapes. You may sketch a headset with tubes located like a hearing aid, and you know nothing about mouth-tube stability at the mouth of any particular wearer: It is good enough? Not good enough? On how many different head-and-ear shapes is it good enough? 3%? 5%? 98%? How is the StarSet different, so that it works on most all head-and-ear shapes while the R-71 needs adjustments on the top ear mount as well as bottom ear hooks, etc? (Cf. Mol., App. 931)

The StarSet sits in and is vertically supported by the crease at the top of the ear. Even during head movements, gravity continually forces the top of the set into the crease between ear and head. No other point is so blessed. It follows that this top-of-the-ear point is the most stable point of any ear-mounted device.

That fact never was important before; it is now. It was never appreciated before; it is now that we know the better results Hutchings got with his StarSet.

The shape of many ears accommodates the capsule behind it, grips it with adequate friction to hold it pretty-darn well. (Evidence:

some people are alleged to be happy with the R-71 without bottom hook). But others have a wrong-sized crease behind the ear. If the capsule is pushed in too far, a sore pressure point develops. If left hanging loose, as the head turns, torsional, centrifugal or inertia forces tend to swing the capsule from its niche. With many ears, the capsule movement is significant when multiplied by the lever arm of the tube reaching out to the mouth.

The MS-43 and Telex Flygstad and Bell post-auricle efforts experienced the problem sufficiently that these experiments were all abandoned.

Roanwell, however, was hurting in the marketplace, bad. On the mouth-tube-under design Roanwell persevered harder than those before it, no doubt because of the pressure from Plantronics' competition and its Hutchings patents. It *had* to have a mouth-tube-under as a retreat position if it could not justify its plagiarism of the mouth-tube-over in court.

For its R-71 with mouth-tube-under, Roanwell eventually solved the instability problem, at least a substantial bit, by providing both a length and swivel adjustment for the top-mounted ear tube, i.e., an adjustment for the top-of-ear hook and also a rib in the capsule front coupled with an adjustable hook for the bottom of the ear both for the purpose of limiting the capsule bottom against outward swings.

You see, something to limit the capsule bottom against outward or rearward swings is necessary on any post-auricle headset for satisfactory mouth-tube stability in context of head movement.

With adjustable hooks at both the top and the bottom of the ear (which Telex Flygstad and MS-43 and Bell's post-auricle sets never had), the mouth-tube-under can be made to "do" for most ears and apparently do very well indeed on some. But as Defendant's Mol himself testified,

"The 71 was a version which had more adjustment and *more difficulty in putting on* * * *" (App. 931).

By contrast, said Mol:

"The headset which we found to be easiest to put on, a single piece with no adjustment features to speak of, or very few, **was by far the easiest to put on.**" * * * This was in essence the R-70, the over-the-ear voice tube version. It had no adjustability in terms [I described yesterday]." (App. 930-31)

Elsewhere the fact that the lower hook was commonly removed and never used, was admitted. For reasons later to appear.

Roanwell succeeded in getting a barely viable under-the-ear model where others had failed, by adding adjustments and sacrificing the simplicity which all designers seek.

But if the R-71 really was as good as the StarSet for all people, Roanwell of course would have little incentive to have undertaken the burdens of this Hutchings patent litigation. Defendant's Mol admitted that the R-70

"had a distinct advantage of one kind over another, and somewhat of a disadvantage." [and vice versa] (App. 931).

What did the Hutchings invention do instead of the R-71's adjustments, both top and bottom? Hutchings used the stiffness of the flexible ear tube, connected to the bottom of the capsule, as the extra anchor to hold the relatively free-swinging capsule-bottom against movement during movements of the head.

When the top is well-anchored and the mouth tube with its leverage length is mounted there, the stiffness of the ear tube is sufficient limitation on movement of the lower end of the capsule. No hooks needed on Hutchings' bottom end. To put them on is superfluous.

A double-dip: mouth tube secured by continuous gravity in the most stable place at ear top; ear tube used to hold the bottom against significant swinging movements. No need for top-of-ear adjustments or bottom ear hooks or adjustments.

Now that we know, the reason Roanwell fights so hard for the privilege of reaping where it did not sow is understandable.

Now that we know, it all *seems* so obvious. Because it is obvious to us, now.

But there were people "who were there" at the time the invention was made; to them it was not.

The patent system must be a real-world thing or it is a fraud upon those who rely upon it. And the statutory phrase "person of ordinary skill in the art at the time the invention was made" commands the courts to make it a real-world thing.

By statutory definition, the requisite "inventive faculty" has been exercised if the inventor did something that was not obvious to those of ordinary skill in the art — i.e., if the inventor brought to public enjoyment something like ear-mounted headsets which others proved unwilling or unable to bring to public enjoyment. Something for which there was unsatisfied need and desire — in this instance of a magnitude to be worth millions of dollars a year.

Truth and fiction in sales figures.

The parties agree: Compare invention against closest prior art.

Roanwell's brief equates its R-71 100% to its R-70 and the R-70 to the prior art, but Roanwell's own designated witness and designer testified they were significantly different, each with its own advantage. (App.931) The brief then compares selected sales figures, to a grossly false conclusion. But the parties have so much agreement we need not focus on our differences to prove Plantronics' point.

Roanwell asserts, and Plantronics agrees, that the better comparison is to

"test the commercial success of plaintiff's headset against the closest prior art." Br. 26

And Roanwell further asserts, and Plantronics agrees again, that

"the closest prior art headset [is] the post-auricle headset with an under-the-ear voice tube." Br. 26

Roanwell then imposes an artificial constriction upon the agreed tests by comparing only its own late-discovered R-70 and R-71 sales figures, when (a) the StarSet sales are the most important part of the invention's sales success, and (b) the R-71 is not the closest *prior art*

but is a *subsequent* design with ear-curve rib and top and bottom adjustments and a bottom hook added to the prior art (says Mol, some distinct advantages of its own).

For the most meaningful comparison, all the sales of the patented invention from whatever source must be compared with all sales of "the closest prior art headset" from whatever source. That comparison rules out the R-71, since its adjustments and rib and hooks, required to make it work on many heads, are not prior art.

Prior to trial, there were four years of competitive sales, 1971 thru 1974. There is a pre-trial stipulation of StarSet sales through June 1974 (Ex.App.378) which never got up-dated through December 1974.

Roanwell has answered interrogatories to the effect that its sales to Western Electric for one 18 month period, January '73 to said '74, are 7,264 R-70 units and 2,826 R-71 units — 2.5 to 1 in favor of over-the-ear.

There also was a pre-trial stipulation of Roanwell sales to *all* customers (Ex.App.380-81) as being 2.5 to 1 in favor of the R-70. At trial, over Plantronics' objection, Roanwell withdrew that stipulation and through an employee, D'Agostino, presented dramatically different figures for sales to others than Western, showing such sales for the four years January 26, 1971 to December 9, 1974 to be approximately 6-to-1 in favor of the R-71, 4,886 R-71 units and only 855 R-70 units. (App.824) These figures are grossly distorted from free market choice, and are meaningless, as explained two pages below. However:

Using all those figures most favorable to Roanwell's point, we find:

| <i>Invention</i> | | <i>Closest Prior Art</i> | |
|--|---------|--------------------------|---|
| StarSet | | | |
| 1971-to mid-74 | 519,951 | Telex-Flygstad | 0 |
| R-70 sales | | | |
| to Western | | | |
| 18 mo. '73-'74 | 7,264 | MS 43 | 0 |
| R-70 sales to | | | |
| non-Western | | | |
| 1/26/71-12/9/74 | 855 | | |
| Total | 598,070 | Total | 0 |
| — Roughly 600,000 to zero in favor of the invention. | | | |

Even if we concede Roanwell's most biased argument using its late-changed figures, and credit the R-71s as though they were "prior art", the ratio is 598,070 to 7,711 or a 77-to-1 ratio in favor of the invention.

We can challenge anybody to cite any instance of a more dramatic favoritism of the public, after four years of competitive marketing, for any invention over any prior art — even "prior-art" with post-invention improvements added.

* * *

The 6-to-1 Roanwell figures are meaningless.

Prior to any Roanwell sales, Roanwell's Potter was analyzing the Hutchings patent and sending copies of his analysis to his designer Mol and his patent lawyer Clark. (Ex. App. 554) This suit was filed in April 1972 and by far the lion's share of those sales (about 75%) were for periods after suit was filed. Thus it is clear: Roanwell was at all relevant times painfully aware that it was an acute Hutchings patent problem.

Next note the extremely small number of units Roanwell admits having sold to 37 different customers other than Western Electric (D'Agostino, App. 825) over the approximately four years from January 26, 1971 to December 9, 1974 (a puzzling pair of cut-off dates). In those years of competitive selling, 5,741 units total, or roughly \$7,500 worth of gross sales in each of the four years.

Given the cost of marketing alone, not to mention the financial expenditures for contesting the Hutchings patents, those small figures simply cannot be real regardless of their ratio.

Of course we do not charge either counsel or Roanwell with falsifying testimony in court. Rather the record is consistent with Roanwell's possibly having manipulated sales during the pendency of the litigation so that the technically accurate actual sales would come out favoring the R-71 at trial and be used as an argument against the patent. If true, then to Roanwell this is a double dip: We manufacture evidence against the patent, and thereby hopefully win; but if we lose we have kept our liability low by keeping sales very very low.

The surprise witness, D'Agostino, with his new figures to December 9, 1974, which substituted in the March 1975 trial for the previously

stipulated figures covering only 18 months, testified that he did not know whether the figures he reported had been deliberately biased by sales policy (App. 826).

So we look at the context that:

- (1) discovery into such matters at routine times weeks before trial were effectively cut off by Roanwell's statement that the actual figures were burdensome to come by while being willing to stipulate "estimated" figures that favored the patent 2.5 to 1. That seemed to make further digging into the figures an unnecessary expense.
- (2) Those pro-patent figures were changed to 6-to-1 against the patent on the first day of trial. In spite of the court's offer of time for discovery on the subject of the withdrawn stipulation, real parties cannot afford the thousands of dollars worth of cost of trial preparation and flying witnesses from thousands of miles away only to postpone it all and have lawyers and witnesses forget their study of 1000 pages of documentary exhibits, etc., all while another many months of the patent's life wastes away. So there was heavy pressure to get on with trial and a disposal, as Roanwell well knew at such late date.
- (3) The surprise witness, D'Agostino, with his new figures now suddenly found substitution for previously stipulated figures, by happy coincidence was able to testify that he did not know whether the figures had been deliberately biased by sales policy of the company in response to the law suit.
- (4) President Powers, of the Defendant which has the burden of proof, and who must have known the sales policy biases, did not appear to support his cause.

In such a context, perhaps Mr. Powers' silence is the loudest testimony of all, that the 6-to-1 figures supplied by a man who knew not of sales policy biases, are meaningless figures.

— Entitled to such zero weight, that perchance they ought never have been admitted into the record.

However, any way you twist the figures the reality comes through the same: There is an important favoritism of the Hutchings patents post-auricle headset over any and all other varieties of ear-mounted headsets, and even more so over the closest prior art like MS-43 and Flygstad without multiple adjustments, etc.

IV. THE DESIGN PATENT

Functional vs. ornamental

35 U.S.C. § 171 provides for patents on "any new, original and ornamental design for an article of manufacture."

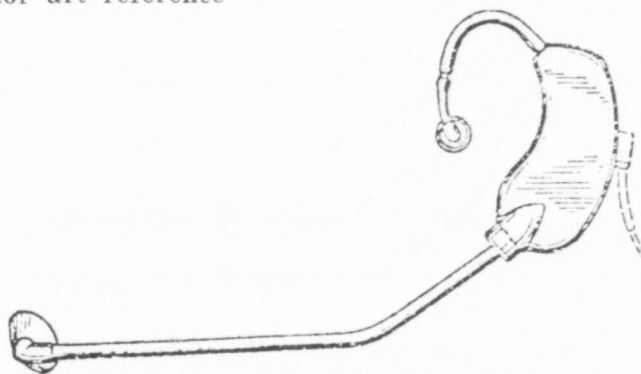
Defendant urges that the entire effect of the Hutchings StarSet is functional, not ornamental as is required for patentability of designs under 35 U.S.C. § 171.

Plaintiff finds that argument not only wrong, but totally incredible. The trial court likewise rejected this astounding effort to justify plagiarism.

At pages 9-10 of Plaintiff's original brief, there appear pictures of a dozen samples of the prior art. They have in common three functional requisites: (1) a curve to fit the back of the ear, (2) a hook over the top of the ear (one reference omits this feature), (3) a housing for both microphone and ear transducers.

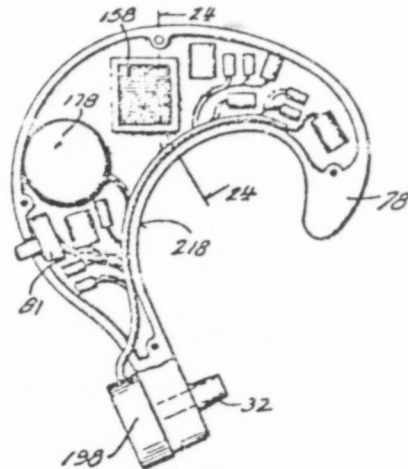
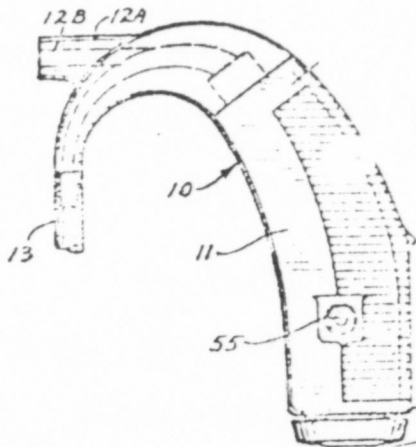
Yet a glance at them reveals that in aesthetic or ornamental design they are markedly different from each other as well as from the patent and accused structure.

Assume for the sake of argument a mouth tube added to those references which did not in fact include one, and a mouth tube repositioned over the ear for those which have it elsewhere. Even so, this prior art reference



is undeniably different in ornamental design treatment from each of

these prior art references



and different from the sketches made at trial of still other ornamental designs which accomplish the same function, e.g., Trial Ex. 154 (Exhibits App. 632.)

— And from the accused structure



But all of them have the functional requisites in spite of their ornamental differences.

If the courts cannot recognize those ornamental design differences even in the presence of the functional requisites, then the design patent law was nothing but an idle doodling of the Congress.

The argument that all the ornamental design of the accused structure is merely functional, is specious.

***The prior art does not justify
the accused structure***

True, as Defendant argues, the trial court opinion contains a sort of gratuity to defendant — a statement unsupported by any findings or other explanation, but reading:

"If the Hutchings [design] patent were given a sufficiently narrow interpretation to preserve its validity, it would not be infringed by the R-70."

That conclusion, inexplicably, is inconsistent with the Court's findings. On the infringement side, consider:

(1) the trial court conclusion of infringement (App. 1123-24), from which no appeal is taken by Defendant;

(2) the finding that the accused structure was so similar to the patent that

"the conclusion of deliberate copying seems inescapable" (App. 1117);

(3) Defendant's designated witness Mol's admission that

"to the average layman they would look substantially the same." (Roanwell depo., Tr. Ex. 142, p. 230; App. 1118)

(4) The trial court's clearly correct finding that the accused structure is

"much closer to the [Hutchings patented] StarSet than to the prior art" (App. 1117)

On the validity side, consider

(1) Defendant's admission that there is no prior art which fully anticipates the Hutchings design (Def. Br. 29);

(2) the trial court finding that there are

"thousands of other [designs] which [Hutchings] might have chosen" (App. 1121)

no one of which is suggested by the prior art more than any other (so how can any one be "obvious" under 35 U.S.C. 103?);

(3) the trial court finding there exists an

"infinite permutation of the number of planar side sections, of ratios of their respective lengths, and of angles

between them" (App. 1121)

— again, no one of which is suggested by the prior art more than any other.

Those findings, particularly the one that the accused structure is "much closer to the patent than to the prior art," simply negative the gratuitous recitation upon which Defendant relies.

Your honor by now has already seen pictures of the patented-and-accused structures in our original brief and earlier in this brief, and hence have hindsight advantage of knowing where you want to come out, which foresight designers do not have.

Even so, Plaintiff must challenge any man who says that by seeing the prior art, shown opposite, those of skill would obviously arrive at the patented or accused design. Try it yourself. Look at the designs, and see what they make "obvious" as the way the designer should go for aesthetic, ornamental appeal.

Since the plagiaristic infringing similarity of accused structure to the patent is so unquestioned as to be not the subject of appeal, and the accused structure is undeniably much closer to the patent than the prior art, there is no basis for relating validity to infringement as the trial court did in its gratuitous statement—the conclusion is negated by the correct findings.

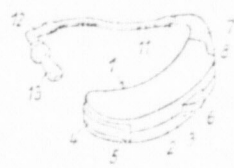
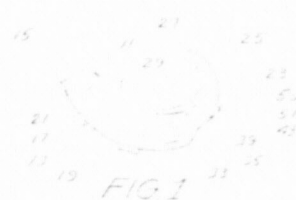
Objective vs. subjective test

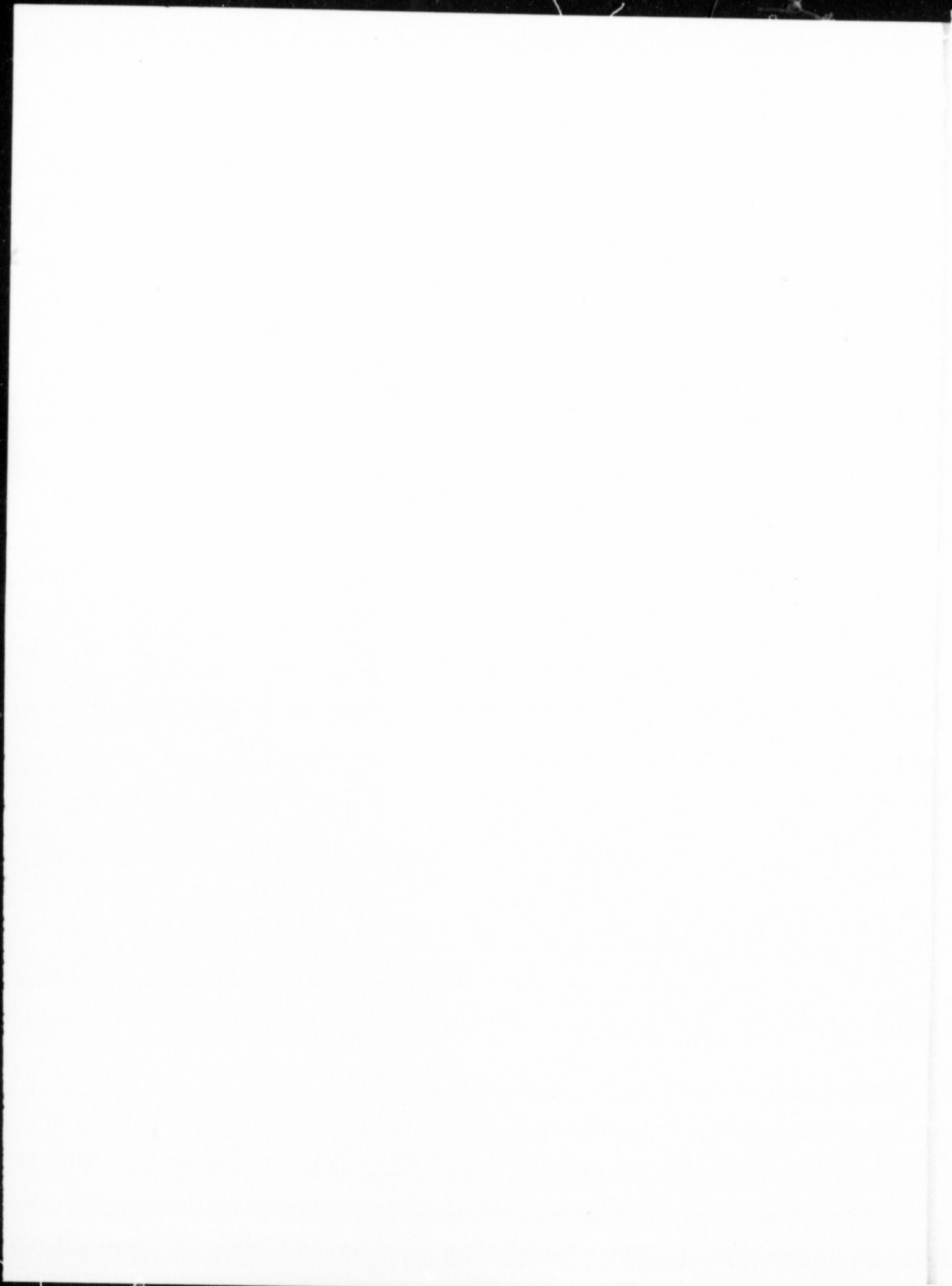
Plantronics' appeal on this design patent is based primarily upon one point: The trial court made it clear that it was applying a subjective test of aesthetic-taste-to-himself, rather than the objective test of "obviousness" required by the statute, 35 U.S.C. § 103.

Defendant's brief attempts to respond to this argument with two points: First, Defendant observes that

"the court found that the failure of the record to reflect any design training or experience whatever on the part of Hutchings was 'some evidence that only routine skill was involved in his design.'" (Def. Br. 31)

To that we respond that whether the designer employed training or experience is irrelevant; it is solely the merit of his design product





that controls. And during trial the court correctly so stated in *sua sponte* questioning of Plaintiff's offer of evidence of Hutchings' design background. When Plaintiff tried to offer proof of Mr. Hutchings' extensive design background and design awards, the trial court cut short Plaintiff's evidence on that point with:

"I don't know the relevance of this, Mr. Janicke. Suppose he painted the ceiling of the Sistine Chapel, would that help him on the design patent of this particular design?" (App. 889)

Plaintiff believed then and now that the court was at that time correct, and presented no further evidence on the point.

It is certainly chaffing to Plaintiff, to have had the trial court say the evidence was irrelevant (thereby to cut short the offer of evidence on this point of skill of the inventor), and then chastise Plaintiff's case for not having proved what he said was irrelevant.

But the fact is that even so, the record does contain substantial if incomplete proof of Mr. Hutchings' long experience as a successful designer of articles of manufacture. Before the court interrupted the offer of this evidence, Mr. Hutchings, an Englishman, was shown thus:

- (1) In 1956 he started at E. Shipton & Company of England, as a designer, and went on to become chief engineer. (App. 889)
- (2) He designed the speaker telephones that executives of British firms have on their desks for conference communications. App. 889. (Telephones involve both aesthetic as well as functional design.)
- (3) He designed two hearing aids. App. 889. (Hearing aids always involve aesthetic design.)
- (4) He designed two office tape recorders. App. 889. (Tape recorders involve aesthetic attractiveness as well as functional attributes.)
- (5) He designed several projects for the government, including a sealed toggle for the Minister of Supply and sealed jack for the Admiralty. (App. 889.)

The trial court's findings that "the record does not reflect that Hutchings had any design training or experience whatsoever" is clearly erroneous.

As it happened, other design experience and merit aside, it also occurred that the Hutchings *design of the patent in suit* won the Wescon Industrial Design Award at the 12th Annual Design Awards of the Western Electronics Show and Convention. And since that related to the design in suit, rather than a prior design, that did get into the record. (Ex. App. 395-99)

As its second and last attempt to prop up the erroneous district court holding on the design patent, Defendant urges that the court was in fact applying the objective "obviousness" test to 35 U.S.C. § 103. (Br. 31) Defendant attempts to support its position with a quote from the court's opinion which is the height of unsupported subjectiveness: "I cannot believe that any artistic talent beyond that of a designer of ordinary skill in the art was required." When read in its context of absence of supportive fact-findings, that is a clear expression of subjective taste, and is in no way addressed to whether Hutchings' particular pleasing results was obvious to persons skilled in the art at the time.

Research and development budgets are justified by business *only* by the protection of what *ordinary research and development dollars will buy*. If only the work of Michelangelo is to be protected, no business today can justify an R&D budget.

It is the purpose of the patent system to induce the commitment of dollars into research and development. Levels of "talent of the designer" have no place in the statutory scheme—only "obviousness" of the particular design made, regardless of its beauty to the beholder or the genius of its creator. 35 U.S.C. § 103.

It was that focus of attention which Defendant's brief restates, upon level of talent of the designer, that brought the trial court to the error of conclusion of invalidity, into the dictates of his own findings of fact. Clearly, the trial court's findings of fact compel the conclusion of nonobviousness — and patent validity.

* * *

Said this Court of Appeals recently:

"Some time ago this court said in a case that has been followed in the Fourth and Fifth Circuits among others,

'The imitation of a thing patented by a defendant who denies invention has often been regarded, perhaps especially in this circuit, as *conclusive evidence of what the defendant thinks of the patent* and persuasive of what the rest of the world ought to think.' " *Lancaster Colony Corp. v. Aldon Accessories, Ltd.*, 506 F.2d 1197, 1200 (2nd Cir. 1974) emphasis added.

V. ROANWELL WRONGLY SLURS WITH CHARGES ON ISSUES NOT BEFORE THE COURT

Roanwell's brief repeatedly slurs Plantronics with innuendos of inferred wrongs not relevant to any issue raised on this appeal. For example, Roanwell asserts that Hutchings got a patent not here in suit without telling the examiner of what Roanwell asserts to be a relevant reference. We cannot as a part of this appeal try that non-lawsuit as to a structure never commercialized.

As discussed previously Roanwell asserts lack of candor with the British Patent Office in connection with a British Larkin patent not here in suit and which has application only in the U.K. There again we see slurs avoiding the direct issues.

Roanwell builds a point upon alleged inoperativeness of the Larkin patent disclosure — while having stipulated in open trial court that the disclosure is operative and thereby cutting off evidence on the point.

Roanwell's brief states categorically at p. 37 that one Bowman, former assistant to Mr. Larkin who has claimed to be an inventor, is the inventor of the Larkin patent — but then the brief backs off and admits that the district court found that the record did not support Bowman's claim and

"This point will not be pursued on this appeal".

If the point is not on appeal, Plantronics begs leave to waste no time responding to the false charge of Bowman's inventorship in confidence the court will *non sua sponte* take up an issue the party does not.

Etc. Etc.

We ask the court to disregard such slurs even though we cannot respond to them all.

* * *

***The trial judge was correct that
the Larkin patent examiner knew
all about ear tubes.***

While not urging on this appeal any legal wrong as to Plantronics' conduct before the Patent Office (except the British Patent Office) to invalidate any patent in suit, Roanwell goes to some pains to urge that Larkin's attorney did not tell the Patent Office that ear tubes per se were old in the art. (Roanwell Br. 38-39).

Larkin never claimed to have invented ear tubes as such. Ear tubes were too well known then for it to occur to anybody to have to cite them and they were known to the examiner.

Judge Conner noted that the Patent Office examiners who handled the Larkin application also handled hearing-aid applications and hence knew about ear tubes. Roanwell criticises this finding as "wholly beyond the record in this case." Not so.

The Primary Examiner who approved issuance of the Larkin patent was Robert H. Rose (Ex. App. 224) — the same Primary Examiner listed on the 1961-filed Guttner post-auricle hearing-aid patent with ear tube (Ex. App. 174). Rose was handling both applications concurrently.

Finally Roanwell complains that the Dreher reference which was before the examiner, was explained to him as not having an "ear tube". — Which of course it truly does not have in the same sense as the Guttner, Larkin, Hutchings, or Roanwell flexible tubular ear tubes.

Since the examiner had Dreher in front of him to see, and also had Guttner with the flexible longer ear tube also assigned to his area of work, the record is that he knew that there are "tubes" and "tubes" and he surely knew what their similarities and differences are.

***Roanwell's attack on operativeness
is contrary to its stipulation
in the trial court***

Although Roanwell did not attack the sufficiency of the Larkin patent specification in the trial court, and indeed stipulated operativeness, the Roanwell brief on appeal seeks to make the point that the success of Larkin's headset was due to factors not disclosed in his

patent. (Br. 64-65) Roanwell contends that it was Audiotone's re-mounting of the transducers and tightening of the clip which led to the success of the Plantronics MS-50.

In the development of *all* devices, "de-bugging," i.e., minor engineering changes, goes on almost forever. Certainly no customer would want the MS-50 if the transducers were so mounted in the capsule that excessive sound vibration would feed back through the housing from one transducer to the other; or if the clip were so loosely designed that the capsule would not stay in place on the headband or eyeglass frame. These nuts-and-bolts changes and corrections are necessary in finalizing the design of just about any product.

However, Roanwell here tries to blow up these engineering details by the following out-of-context suggestion:

"as testified by Mr. Larkin in the Bowman v. PPI suit, the headset disclosed in the Larkin patent was inoperative . . ." (Br. 64)

Roanwell wells know that it is taking the Larkin testimony from another case out of its proper context. At trial in this case, plaintiff was inquiring of a witness concerning what a person of ordinary skill could construct from the teachings of the Larkin patent, and Roanwell's counsel, Mr. Bradley, volunteered the following stipulation:

"Mr. Bradley: Counsel, I am not sure what your point is, but if you want a stipulation on our part that the disclosure of the Larkin patent is sufficient to disclose an operative unit, or someone skilled in the art can make an operative unit from it, we so stipulate." (App. 470)

That ends the question.

There is no genuine issue over operativeness.

VI. CONCLUSION

Plantronics requests this court to affirm the district court's holding of validity of the Larkin patent, and to reverse the holdings of invalidity of the two Hutchings patents.

Respectfully submitted,

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